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THIRTY-SIXTH ANNUAL SESSION,

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INTRODUCTORY

—TO—

PRESIDENT'S ADDRESS.

Ladies and Gentlemen and Members of the Indiana State Medical Society:

It affords me great pleasure to greet you at this, the thirty-sixth annual meeting of our Society, under the favorable auspices which surround us at this time. We have, probably, one of the best organizations of the kind to be found in any of the States; and since its reorganization, eleven years ago, under the constitution by which we are now governed, its work has been done in such a systematic and methodical manner, and so little time occupied in the transaction of its executive business, that we are enabled to perform a great amount of scientific work in the two or three days that we are in session.

And it is especially gratifying to me to be able to congratulate you on the peace and harmony that has prevailed within our membership during the past year, as indicated by the fact that not a single case involving any question of the conduct of any auxiliary society, or any of its members; and therefore our judiciary, the Committee on Ethics, has not been called on to exercise its official functions in a single instance. This fact alone should have no little influence in correcting the erroneous popular impression, which is so frequently heard expressed, that physicians constitute a quarrelsome class.

While we have much for congratulation for what good has been accomplished during the past year, it has not been one of unalloyed pleasure; but our happiness has been mingled with sadness, because the hand of death has been laid heavily upon us, and removed from amongst us a score of our brethren, many of them useful and shining lights in our profession. Thus we are passing away, until I can now see the gray hairs of but few of the founders of our Society who did pioneer work thirty-six years ago.

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PRESIDENT'S ADDRESS.

GLIMPSES OF A FEW OF THE BEACON LIGHTS OF MEDICAL HISTORY.

BY J. S. GREGG, M. D., FORT WAYNE, INDIANA.

While the theme which I have selected for this occasion can not be considered one essential to success in the practice of the medical profession, yet it may be regarded as an important accomplishment in a finished medical education. It is also a subject of almost fascinating interest to those who become enlisted in its study; and may well be recommended to both the young student, and the older busy practitioner, as a means of recreation and relaxation from more arduous employment.

There is, in the English language, a paucity in the literature on the early history of medicine, while other languages, especially the German and French, are prolific enough in this respect.

In fact, with the exception of a few brief sketches affixed to some of our special treatises, we possessed nothing in our language that was at all calculated to satisfy the wants of the profession in this respect, until the year 1856, when one of our own western physicians, Professor Cornelius G. Comegys, of Cincinnati, gave to the profession and the world his translation of the excellent work of the French physician and historian, P. V. Renouard, entitled "History of Medicine from its Origin to the Nineteenth Century." In 1872 the small posthumous work on the same subject, by the late Prof. Robley Dunglison, and edited by his son, Richard J. Dunglison, made its appearance. But this work of the late Professor of the Institutes of Medicine in the Jefferson Medical College, is claimed, by its editor, to be only a "Condensed History of the progress of Medicine, being an embodiment of the course of lectures delivered by the author at the University of Virginia many years since."

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These two are the only works that I know of in our language which claim to give the early development and progress of medicine down to the present century.

I have recently been much interested in the perusal of a small work from the pen of Prof. J. C. Dalton, of New York, entitled "Doctrines of the Circulation;" which gives a synopsis of the progress of medical science, especially as relating to that subject, from the time of Aristotle down to the final solution of the problem by Harvey.

From these three sources, together with a few articles of a biographical character found in some of our encyclopædias, I have drawn and condensed and arranged the most of the facts contained in this address, to which I desire to give due credit.

A critical survey of the beacon lights that have illumined the sphere of our profession from the mythical days of Æsculapius to the present, would require a large volume for description, but I can only at this time offer you some glimpses of a few of those that have shone so radiantly in the earlier historic centuries, some of the scintillations of which have penetrated even through the dark ages down to our modern civilization, with a hope of exciting in the minds, especially of the younger members of our profession, such an interest as will induce them to pursue the subject in a more thorough and systematic manner.

The first and most ancient of these lights which I will introduce to you is Æsculapius, considered by many as a mythical character, and worshiped in the many temples erected to his honor, as the god of medicine. He was reputed to be the son of Apollo and the nymph Corinis. He was educated by Chiron, who taught him the healing art; and his skill enabled him to cure the most desperate diseases. Jupiter, becoming enraged at him, killed him with a thunderbolt.

Homer, in the Odyssey and Iliad, describes him as an excellent physician of human origin. Plato also gives some account of him. He is reputed to have had three daughters named Hygeia, Panaceia and Ægle, afterwards worshiped as goddesses.

Machaon and Podalirius were his sons, and as physicians of celebrity, were attached to the Grecian armies, and were greatly honored for their skill. From them descended the Asclepiadæ, a

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medical priestly caste or school, who preserved the knowledge of medicine as secrets transmitted by heredity for many generations; and who practiced in the multitude of temples erected to their deity in various cities and countries, conspicuous among which were those in Epidaurus, Peloponnesus, the island of Cos, and at Cyrene, etc.

The priests that worshiped and practiced in these temples were called the Asclepiadæ, a word meaning descendants of Æsculapius. They formed a particular caste, governed by sacred laws, like the priests of Egypt.

These temples were generally situated in healthy locations near the sea, or near thermal or mineral springs, to which the sick and convalescent from all directions made pilgrimages. The wholesome regimen to which they were subjected, the pure air, the faith and hope by which they were animated by the novel surroundings and the miraculous cures certified to have been effected in those places, combined to inspire them with a confidence favorable for cure. In addition to these favorable hygienic influences, such remedies were administered by the Asclepiadæ, as were believed to be adapted to each particular case, such as venesections, emetics, purgations, and various manipulations similar to the modern massage, mineral waters, sea bathing, etc. A species of serpent, not venomous, but easily tamed and trained, was frequently made use of by the Asclepiadæ to inspire their patients with an appreciation of the marvelous power with which they have been endowed by the god of the healing art, who often became incarnate in that form.

The secrets of the healing art had thus been for a long time retained among the Asclepiadæ as a family inheritance, and according to Galen no laymen were allowed to participate in this sacred occupation. At a later time this secrecy was somewhat relaxed, and under rigid tests and severe forms of initiation the mysteries were confided to certain strangers who successfully withstood the tests imposed; and thus some sort of medical instruction was probably given in each of the temples of Æsculapius, thereby constituting them the first schools for medical instruction.

There were three of them, however, that became widely distinguished for their teachings, namely, those at Rhodes, Cnidus and Cos. One of the most striking methods of instruction adopted in

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them was probably that by means of "votive tablets," which were hung upon the walls and pillars of the temples, upon which were generally inscribed the name of the patient, his disease, and the means made use of for his cure. Some of these tablets, or their inscriptions, have been preserved as curious relics of that period; two or three examples of which I will give by way of illustration.

One of these tablets found in Rome, on the island in the Tiber, the site of one of the ancient Æsculapian temples, had upon its face the following inscription: "Lately a certain Caius, who was blind, came to consult the oracle. The god required that he approach the sacred altar to perform adorations; at once he passed from the right to the left, and having rested his fingers on the altar, he raised his hands and applied them to his eyes. He recovered his sight immediately, in the presence of the people, who rejoiced to see such marvels accomplished under the reign of our august Antonius."

Another: "Julian vomited blood, and appeared lost beyond recovery. The oracle ordered him to take the pine seeds of the altar and eat them for three days, mingled with honey. He did so and was cured. Having solemnly thanked god, he went away."

One more: "Lucius was attacked with a pleurisy, and every one despaired of his life. The god ordered that the ashes of the altar be taken, mingled with wine, and applied to his side. He was saved, and gave thanks to god before the people, who congratulated him."

The temple on the island of Cos was the most celebrated for its instructions, within whose walls a great number of illustrious physicians arose, whose writings are among the most valuable memorials of antique medical literature.

This brings us to a consideration of a star of the first magnitude among the beacon lights of medicine, who arose at this celebrated school.

Hippocrates, the "Father of Medicine," was born on this island in the year 460 B. C., and was destined to effect a greater revolution in medical science than had previously been accomplished, by divesting it of much of its superstition and mysticism, and establishing it upon philosophical principles; and whose authority continued to be regarded with the highest veneration by his successors, during a

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period of more than two thousand years; and which is still, in some parts of Europe, regarded with the greatest reverence and respect.

Dr. Parr has said: "If we look upon him as a physician when medicine had scarcely escaped from the trammels of superstition, or the dictates of antiquated tradition, our admiration will rise almost to enthusiasm, for we shall perceive sound judgment, accuracy of reasoning, and acuteness of observation superior to his era or the state of science at that time."

It is true that he probably had advantages superior to those of any of his predecessors, for, besides being a member of the family of the Asclepiadæ (and was believed to be either the seventeenth or nineteenth descendant of Æsculapius), he was instructed in the famous Asclepion of Cos, and probably at Cnidus, and had the benefit of the instruction of his grandfather and Herodicus of Selymbria, and his father Heraclides, by whom he was initiated into all the mysteries of the Asclepiadæ, as well as enjoying the advantage of the instruction of the eminent teachers of philosophy, Gorgias of Leontine and Democrates of Abdea (whom he afterwards cured of insanity), and of living at the time of great intellectual development, probably having the benefit of the works of such philosophers and scholars of Socrates, Plato, Sophocles, Herodotus and Thucydides; and it only needed a powerful mind, such as his own, to bring to bear upon medicine the same influences which were at work in other sciences.

In consequence of the prevalent popular prejudices against the desecration of the human body by dissection, his knowledge of human anatomy was limited and imperfect, and such chiefly as could be obtained by dissection of the lower animals, in which he had large experience.

The prevailing superstitious veneration for the dead was so great that any conduct towards their bodies contrary to the popular prejudices was visited with exemplary punishment. These prejudices had their origin in the opinion, for a long time entertained, that the soul, when freed from its material covering, was obliged to wander on the banks of the river Styx until the body was consigned to earth, or consumed by flames; hence the eagerness with which sepulture was performed on the dead to insure the rest of their

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souls. They were required to bury the bodies of their enemies even, after battle, and also the bodies of strangers whenever found.

He made no distinction between arteries and veins, but called them indiscriminately *veins;* and applied the term artery (arterion) to the *trachea.* He confounded ligaments and tendons with nerves, and, of course, did not know the functions of the latter.

He supposed the existence of four fluids of the body—blood, phlegm, and yellow and black bile; blood from the heart, phlegm from the head, yellow bile from the gall bladder, and black bile from the spleen.

Although his anatomical knowledge was necessarily crude, his description of diseases was far in advance of that of any of his predecessors or contemporaries; and many of his terms are still in use in nearly the sense in which he used them.

He was the first to divide diseases into three stages or periods, designating them as those of crudity, concoction and crisis. He was the real inventor of the art of prognosis.

He had observed that many diseases were subject to certain laws of nature, and that, in fevers more especially, the evacuation of morbid matter is apt to take place on certain and regular days, and he called those *critical days,* the principal of which are, according to him, the fourth, seventh, eleventh, seventeenth and twentieth; and in his description of cases he frequently reported them as being cured by *critical sweats.*

He also examined carefully by inspection the urine, feces and sputa, and deduced from their conditions some very logical conclusions.

He gave wholesome directions as to diet and exercise; and it is to the Coan sage that we are indebted for our first notions in regard to the regimen to which patients should be subjected in acute diseases. In the first and second stages he prescribed cooling and diluent drinks and fasting, to assist concoction; hence the following important precepts of the physcian of Cos: "The more we nourish an unhealthy body, the more we injure it. Nothing should be given to the patient while the affection is increasing, and especially towards the time when the crisis is on the point of occurring. We ought without delay to prescribe a very spare diet when the violence of the fever is extreme at the commencement, and at the same time to

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examine into the strength of the patient, to satisfy ourselves whether he is in a state to bear a privation of food until the time when the affection may arise at its highest point of intensity. The quantity of nutritive matters ought to be increased with very great circumspection; frequently total abstinence produces the best effect when the patient is sufficiently strong to bear it during the whole course of the fever; but in the application of these rules attention must be paid to the degree of violence of the affection, its progress, the constitution of the patient, and the habits contracted both in regard to meat and drink."

In the same book the author exposes the precautions which should be taken when we are about to alter the customary regimen of patients, and lays down some excellent precepts, the observance of which he recommends to those who would pass from a severe regimen to one less strict, and *vice versa.*

The utility of diluents in fevers is a principle first noticed by Hippocrates, and which even at the present day is almost universally adopted with some slight modifications.

His object was to assist nature, for he had observed that there is an effort of nature which generally tends to the establishment of health, although a cure may not always follow; and it was in consequence of such observation that the axiom contained in his sixth book of Epidemics was promulgated—"Nature is the first of physicians."

Dividing acute diseases into three stages, he made it a point to observe with the greatest care the power of nature in each of those stages; of stimulating when they seemed to him insufficient, and of modifying them when they were superabundant. He often practiced blood-letting when he observed fullness of the vessels, and endeavored to replenish them when he perceived that they were empty. In acute diseases he bled, especially when the patient was young and robust; his principal object being to lessen irregularity of febrile action, and to hasten concoction he generally bled in the first stage. He practiced venesection also in dropsies, when the patient was young and robust.

In his treatment he had regard to climate, seasons, atmospherical conditions, age of the patient, and nature of the affection. As evacuants of the *prima via* he made use of several vegetables, few

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of which are now in use. He also used clysters and suppositories, and administered emetics, diuretics, diaphoretics and expectorants.

With the exception of alum, some of the preparations of lead and copper, and cantharides, the materials for his pharmacy were generally drawn from the vegetable kingdom, for chemistry as a practical science was not developed till a later period.

The Coan sage was not only the greatest physician of his age, but he was by no means a bad surgeon for the time. He was the inventor of the art of bandaging. He believed in the efficacy of heat in the cure of wounds, and used warm emolient cataplasms; he observed the frequent complications of erysipelas with wounds, and the fact that suppuration inevitably resulted when wounds were caused by an obtuse body.

In his work on wounds of the head, the circumstances which required the use of the trepan were clearly indicated. He used for this operation two different instruments, one which resembled the trepan, and the other the trephine. In the same book he remarks that pain is frequently felt in the side of the head opposite to the wound.

He performed paracentesis thoracis; made use of extension and counter-extension in the treatment of fractures, afterwards applying a bandage, and over it splints properly secured. He mentions the length of time usually required for fractures to consolidate, and also the fact that age, sex, and various other circumstances may hasten or retard the formation of the callous. Some of the apparatus which he used for the reduction of dislocations of the larger joints were quite complicated; but his means of treating those of smaller ones was quite simple.

His description and treatment of different forms of distortion of the feet are worthy of study; and he described several different forms of spinal curvature, and recommended for their cure an apparatus similar to some in use in modern times.

Hippocrates traveled extensively, and taught and practiced at Athens, Thrace, Thessaly, Delos, and on his native island.

The revolution which he effected in practical medicine, semeiology, pathology, dietetics, and therapeutics, is more important from the fact that the practice and teachings of the Asclepiadæ were not adapted for the improvement of the science of medicine. If

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the improvements which he inaugurated in their practice and teachings had been continued by his disciples (among whom were his sons Thessalius and Draco, and his son-in-law Polybus), and his successors a century later, who had the advantage of the teachings of the first two great human anatomists, Grecian medicine would have attained a degree of perfection of which we can scarcely form an idea.

But after the death of Alexander the Great, Grecian literature and science began to languish under the influence of a weak and distracted government and state of society, and their scattered embers began to be collected in one spot; and the celebrated school of Alexandria, under the fostering care of the Ptolemaic dynasty of the sovereigns of Egypt, which flourished for a time, but relapsed into decline after a few of its great men had passed away.

But before the occurrence of these events, Aristotle was born in Stageira, a Greek colony on the Macedonian frontier, in the year 384 B. C., three-quarters of a century after the birth of the Coan sage. He belonged also to the family of the Asclepiadæ, and was the son of Nicomachus, physician to the Macedonian king Amytos; and thus he probably inherited the scientific tendencies of his mind, as well as the character and traditions of that family, which afterwards made him so distinguished as an anatomist and physiologist, though he did not engage in the practice of medicine as a profession. In the general obscurity in which human anatomy was enshrouded previous to his teachings, there was no accurate knowledge of the intricate organism of the human body, further than what was derived from the dissection of lower animals only, which he prosecuted more carefully, thoroughly and systematically than any before him, becoming the founder of Comparative Anatomy, and was the first to apply its facts to the elucidation of Zoology.

He is generally admitted to have been the most profound investigator of all the sciences known to man at his time, to which he added many new branches of inquiry; and his influence upon the European thought and knowledge, down to the revival of letters, was greater than that of any others; and besides representing in himself the culmination of the Greek speculative philosophy, he was also the forerunner of modern science, which is still rich in terms and phrases introduced by him.

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While he is now no longer regarded as authority, yet to prove the fact of Aristotle's influence as one of the great fountain heads of thought in modern times, it is only necessary to mention the fact that during the present century the University of Oxford has made a renewed study of Aristotle one of the chief instruments of education.

At the age of thirty-nine he was requested by Philip, king of Macedon, to undertake the education of his son Alexander, afterwards the Great, conqueror of the world; and who, after his accession to the throne, aided his talented and beloved teacher in making still further progress in his scientific pursuits, by the donation of 800 talents, or more than $800,000; and thus was enabled to make still greater advancement in philosophy and the sciences already accessory to medicine.

His philosophy received the appellation of "Peripatetic," for the reason that he established a school of his own in the covered walks (*peripatoi*) around the temple of the Lycean Apollo, on the east side of Athens, in rivalry to the Platonic school, which had been established in the gardens of the Academia, on the west side of the city.

When we take into account the fact that Aristotle, according to the best authorities, probably never dissected the human body, but depended for his knowledge of anatomy upon the dissection of the lower animals, we can readily make allowance for his numerous errors. Yet he laid the foundation of anatomical science, whose ancient superstructure was, some time afterwards, erected into an edifice of such symmetrical proportions by the two great anatomists of the Alexandrian school, that little or no improvement was made in it for many centuries.

While Hippocrates had a fair knowledge of the human skeleton, he knew comparatively little of the structure of the softer tissues. But in several instances Aristotle added to this knowledge. He was, for instance, the first to place the origin of the blood vessels in the heart, instead of the head or brain, according to his predecessors; and gave to the largest artery the name (aorta), which it still retains.

In his conception of the sanguiferous system, the heart is the central organ and prime mover of the whole; but not in the same

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sense as now understood. He also believed it to be the seat of vitality, where the blood was finally elaborated (by concoction), and impregnated with animal heat.

To illustrate his understanding of anatomy and physiology, and the conciseness of his style of teaching, I will give a few quotations from the third volume of his "*Opera Omnia*":

"The right kidney, in all animals provided with these organs, is placed higher than the left. Owing to this position it lies in contact with the liver, which is also placed on the right side." (Page 267.)

"The heart, on the other hand, being the origin of the blood-vessels, containing within itself the primal force for the formation of the blood, consists, no doubt, of materials drawn directly from the nutriments." (Page 230.)

"The heart and liver, accordingly, are indispensable organs in all animals; the former as the source of heat, since there must be a focus or fire-place of some kind where the embers of nature are kept alive—well protected, and, as it were, the citadel of the body; the liver to aid digestion." (Page 265.)

Again from the same volume we quote:

"The arrangement of the vascular system is as follows: There are two blood-vessels within the thorax, along the spinal column. The larger of them is towards the front; the smaller behind. The larger is rather on the right side; the smaller, sometimes called the 'aorta,' because of its fibrous texture, perceptible even in the dead body, is on the left." (Page 40)

In describing the distribution of the branches of the aorta, he says: "The divisions of the smaller blood-vessel, called the aorta, are distributed in the same way—running in company with and alongside those of the larger, only their channels and branchlets are much smaller than those of the great blood-vessel." (Page 42.)

On account of the want of proper optical instruments to enable them to observe that these terminal branches were tubular continuously, he as well as others believed them to terminate in fibrous cords, as shown by the following extract:

"The so-called aorta is a blood-vessel of fibrous texture, its extreme branches being entirely so; for they have no cavity, and

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resemble in consistency the sinews where they terminate at the bony articulations." (Page 43.)

To illustrate Aristotle's views on the distribution of blood and nutriment, I will make a few more quotations from his same work:

"It (the heart, which was not considered a blood-vessel,) is the only part of the body where we find blood elsewhere than in the blood-vessels; in every other organ this fluid is enclosed in blood-vessels. There is good reason for this difference, since the blood is distributed from the heart to the blood-vessels, but is not brought into the heart from elsewhere. It is the source and foundation of the blood, and its prime receptacle." (Page 258.)

"Animation and the possession of vitality, are necessarily associated with heat. The process of digestion, through which the nourishment of animals is accomplished, can not be carried on without heat as well as vitality, for everything is elaborated by fire. Consequently in whatever region of the body, and in whatever organ the principle of heat is primarily located, there also must be the vital principle of nutrition. The nutriment from which the tissues and organs are produced is the substance of the blood; and the blood-vessels must have the same point of origin with the blood, since they exist only for the sake of containing it, as its vase or receptacle. The other active functions of life, for reasons to be explained hereafter, can not go on without that of nutrition; nor that of nutrition without the fire of nature (animal heat). For nature kindles the nutritive functions in this fire." (Page 542.)

I might continue similar quotations to a much greater length had I time, but these must suffice.

Aristotle fully recognized the blood as the general nutritive fluid of the body, with its elements originally derived from food; but elaborated and perfected in the heart, it contains all the ingredients requisite for the nourishment of all the animal structures. Disseminated through the body by the vascular system, it permeates all the tissues; and by its exudation or transfusion in due proportion, it supplies everywhere the materials of growth and secretion.

He does not, however, recognize the propulsion of the blood in a mass by the action of the heart, through the vessels, but that it is kept in a state of constant agitation, and the nutritive material as

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being incessantly consumed at one end and along the way, and as unceasingly renewed at the other.

It will therefore be seen that he laid the foundation for the discovery of the circulation of the blood; and with such a long stride in that direction made by one man, it seems wonderful that, with the light thus shed upon the subject, the great problem was not solved until after many more centuries had rolled away into the misty distance of the past, down to the beginning of the last century, before it was finally consummated; which was at last accomplished by the slow and irregular steps taken in that direction, after the days of Aristotle, down through the long intervening ages, by Herophilus, Galen, Versallus, Servetus, Columbo, Cacsalpinus, and finally culminating in the demonstration, by Harvey, of the transferrence of the blood in the lungs, from the "*vena arteriosa*" to the "*arteria venosa*," or from the pulmonary artery to the pulmonary vein—thus the circuit between the right and left cavities of the heart being complete.

Further, in regard to digestion and nutrition, Aristotle speaks of the body in general as taking its nutriment from the stomach and bowels, "as out of a manger." He also makes a comparison between vegetable and animal nutrition in the following language:

"Plants draw their nutriment, ready formed, from the soil, and consequently they have no superfluous or residual matter, for the soil, with its inherent warmth, serves them in place of a stomach. Nearly all animals on the other hand, especially those provided with limbs, have within themselves a sort of soil, namely the cavity of the stomach, from which they take their nourishment into some other organ, as plants take up theirs by their roots until its subsequent digestion is complete." (Page 234.)

He evidently had no mean conception of the structure and functions of the mesentery, in the process of digestion and assimilation, as we may infer from the following language:

"The mesentery, so called, is a membrane stretching continuously from along the intestines to the vena cava and aorta, full of numerous and closely set blood-vessels, which also extend from the intestines to the vena cava and aorta. In its growth and formation this membrane is, of course, similar to other parts, the purpose of its existence in animals provided with blood being evident on ex-

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amination. Since animals must needs be supplied with food, from which again is produced the perfected aliment for distribution to the organs (which perfected ailment has no special name in bloodless animals, but in the others is called blood), there must be some way for its conveyance, as if by roots, from the alimentary canal into the blood-vessels. While plants accordingly have roots fixed in the soil, in animals the stomach and bowels furnish a kind of soil, from which their nourishment is to be drawn; and for that is provided the structure of the mesentery, with its blood-vessels like so many roots." (Page 276.)

Modern teachers and writers are sometimes accustomed to illustrating this animal function by a similar, and by no means unsuitable comparison, who speak of the valvulæ conniventes and villi of the intestines, imbedded in the nutritious magna like the rootlets of plants in the soil, and drawing their nutriment therefrom, without knowing that the idea is as old as Aristotle.

He believed that after the products of digestion had been absorbed into the blood-vessels and became intermingled with the blood, that they received their complete transformation, or were subjected to the final change in the process of sanguification, in the heart.

Aristotle made no distinction between the functions of arteries and veins, and believed that pulsation was found in both kinds of vessels, and that the principal anatomical difference was in the fact that the aorta and its branches were more dense and fibrous than the vena cava and its branches.

He used the term artery ("air tube") to signify the trachea, as Hippocrates had done, instead of applying it to those vessels which were so named a little later by Praxágoras, and which are still known by that term.

His understanding of the pulmonary artery and vein were farther from being correct than that of the other blood-vessels; in fact he did not regard them as blood-vessels, but called them *channels*, extending from the right and left cavities of the heart to the lungs, into the substance of which their branches penetrated. Although he knew that they did not communicate directly with the "artery" (trachea) or its branches, he believed their function was to receive

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from the lungs the "*spiritus*" or "*pneuma*," and to convey it to the heart, there to become intermingled with the blood.

He did not seem to consider this "pneuma" to be the air in its ordinary state, but rather a vaporous ingredient, or essence extracted from the inspired air, and appropriated by the blood in the process of sanguification.

He considered cardiac pulsation to be an effect of the expansive power of *heat* in the blood, acting through it on the walls of the heart, regarding it as a form of ebullition, the influence of which was communicated to all the blood-vessels.

The dominant idea in the physiology of Aristotle, is that of innate vitality operating through the influence of *animal heat.* The ancients considered "fire," or the principle of heat, to be one of the four elements of nature into which, in their system of physics, they were divided—viz, earth, air, water and fire; considering the latter, though the most attenuated and ethereal of them all, yet the most efficient, and the cause of all the chemical and molecular activity.

The main object of respiration was its cooling influence, in the pulmonary passages, upon the blood, thus maintaining a normal temperature upon the supposed source of animal heat.

The influence of oxygen upon the blood was not known at that time.

Aristotle also considered the act of respiration as due to the wonderful power of heat. The heat in the blood of the lungs caused the expansion of the chest, and by it air was drawn in through the trachea or "artery," as it was called. This heat having been modified thereby, the blood and tissues became contracted, allowing the walls of the chest to collapse, and the act of expiration was the result, and thus inspiration and expiration followed each other in rythmical succession under the varying influence of animal heat, as the tension of the lungs is alternately increased by its accumulation, and relaxed by its diminution.

Prof. Dalton ("Doctrine of the Circulation," p. 36), summarizes the ideas of Aristotle, in regard to the heat and blood-vessels, as follows:

"1. The heart was an organ for giving to the blood its final elaboration, and for communicating to it the necessary element of vital heat.

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"2. The perfected blood was received from the heart into the blood-vessels, arteries and veins alike, and brought, by their branches and ramifications into proximity with the solid tissues which it n urishes by exudition.

"3. The pulsation of the heart was a momentary dilatation from expansion of the blood in its cavities; this expansion being produced by the animal heat combining with the ingredients of the blood. The pulsation of the blood-vessels was due to the same cause, and was simultaneous with that of the heart; the impulse originating in the cardiac cavities being at once communicated to the blood of every part."

Soon after the time of Aristotle, between 300 and 400 years B. C., Praxágoras, a native of the same island that was distinguished as the natal place of the "Father of Medicine" (Cos), became very eminent, and well known throughout the Grecian world for his high reputation both in scientific and practical medicine. His original works have long been lost, but he is known through quotation and reference by Celsus, Pliny, Rufus of Ephesus, Galen and Cælius Aurelianus. According to the latter authority, he regarded stercoraceous vomiting as the sign of acute tumor, or obstruction of the intestine; and for its relief, when other manipulation failed, he advised opening the abdomen and dividing the intestine to remove the obstruction; after which the intestine was to be united by sutures. This would imply that our modern surgery of the abdominal cavity is only a revival of another one of the "lost arts."

He is chiefly distinguished for the introduction of two innovations in relation to the character and functions of the arterial system; one of which was an important step in the direction of the solution of the problem of the circulation of the blood; while the other was an unfortunate retrograde movement in its relation to this important question.

The first was his discovery that the phenomenon of "*pulsation*," which had been attributed alike to arteries and veins, belonged only to the arteries; and that in the veins no such movement was perceptible. His second innovation consisted in this, that while the veins were still regarded as receptacles for blood, the arteries, according to his new theory, contained no blood, nor other liquid, but only gas

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or air. This "air" or gas was not believed by him or his followers to be identical with the atmosphere, but of the nature of the "spiritus" or "pneuma," as described by Aristotle.

The principal cause that is supposed to have led Praxágoras into this grave mistake is the fact that examination of the arteries of the dead body, shows that they generally contain no blood or other fluid, while the veins are more or less distended with it. As the arteries are opened exposing their channels to view, they are at the same moment exposed to the entrance of air, which, on account of the elasticity of the arterial walls, immediately fills them; and this being supposed to be their contents during life, the term by which the trachea had been designated, was appropriated by Praxágoras to the use of these vessels; while the tube to which it had been formerly applied was given a name more in accordance with its rough and uneven character, hence it received the double appellation of "*arteria tracheia,*" or "rough air tube"; but the first half of its title was afterwards dropped, and it has long been known by the single term trachea; although it is said the French still designated it by the retention of the double term, calling it the "*trachie artere.*"

About the year 320 B. C., soon after the death of Alexander the Great, the vast empire of the Macedonian conqueror of the world was dismembered, and Alexandria became the great literary and scientific, as well as the commercial center of the civilized world, under the fostering care of the dynasty of the Ptolemies, the first of whom (brother-in-law of the founder of the city whose name it bears to this day), Ptolemy the first, or Soter, established the great Alexandrian Library and Museum (or university), which became so magnificent under his successors, Ptolemy Philadelphus and Ptolemy Euergetes.

Ptolemy Soter appointed Aristotle to form and take charge of this library, the number of books of which have been estimated as high as 700,000.

The learned of all countries were invited to come to Alexandria by these monarchs, and they were afforded special facilities for availing themselves of the advantages there offered. The two latter of these princes especially, whose authority was equaled only by the zeal with which they patronized science, were the first to

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enable physicians to dissect the human body, and they prevented the popular prejudices of ignorance and superstition from compromising the welfare of the human race.

To these auspicious circumstances, Herophilus (a pupil of Praxágoras) and Erasistratus, who had been induced to come hither, were indebted for the opportunity to make many dissections of the human body, as well as of being distinguished as the Father of Human Anatomy throughout all future ages.

By legal enactment they were enabled to use the bodies of condemned criminals; and though this work was begun under the first Ptolemy, the second and third were so enthusiastic in the development of anatomy and physiology that they not only furnished every opportunity for their pursuit, but actually used the dissecting knife themselves.

The original works of the Alexandrian anatomists have long been out of existence, and our principal knowledge of them and their teachings is obtained through Plutarch, Celsus, Rufus of Ephesus, and Galen.

They enriched anatomical science with many important facts; and in not a few instances gave names to organs and structures, which are still retained. Erasistratus named the *valves* of the heart, and the *parenchyma* of various internal organs, distinguishing them from their enveloping membranes; while the *duodenum*, the *calamus scriptorius*, and the choroid lining of the ventricles of the brain, and that of the eyeball, were terms applied by Herophilus; and the torcular Herophilii was so called because he compared it to the receptacle of a wine press.

Our knowledge of anatomy, and to some extent the physiology of the nervous system, dates from the time of these anatomists and their immediate successors.

Their predecessors had applied the term *neuron* indiscriminately to nerves, ligaments and tendons, and the word simply implied a "cord," without indicating any special function. Herophilus first made a physiological distinction between the different kinds of cords; the nerves proper, which are the ministers of volition, having their origin in the brain and spinal cord; while other cords (the ligaments) are in connection with the articulations; and the tendons are the cord-like prolongations of muscles attaching them to the

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bones. Erasistratus discovered the difference between nerves of sensation and of motion.

Herophilus was the first to consider the brain an organ of commanding influence, considering it the seat of consciousness, the center of the perceptive faculties, and the source of voluntary motion; the essential instrument of the manifestations of animal life, or the immediate functions of the so-called "*anima,*" the immaterial principle of independent existence. He described all the ventricles of the brain; attributing to the fourth, that in the cerebellum, the most important part in the transmission of stimulus to the spinal cord; and he recognized on its floor the configuration of the medulla oblongata, which he designated by an appropriate name.

Erasistratus described the convoluted structure of the cerebrum and cerebellum, and showed by their abundance the superiority of man over the lower animals, in intellectual power.

The veins and arteries were divided in function as had been done by Praxágoras; the former containing blood, and the latter *air*, "*spiritus,*" or "*pneuma.*" According to Galen, Erasistratus recognizes two kinds of "pneuma," with different qualities and modes of action; one being that produced by the inspired air, the *spiritus vitalis,* or "vital spirits," and which filled the left cavities of the heart and the arteries throughout their ramifications. As its name implies, it gave the immediate stimulus to the functions of organic life; caused cardiac and arterial pulsations, internal heat, and was the direct agent in the production and maintenance of digestion, nutrition and assimilation.

The other kind of "pneuma" was the *spiritus animalis,* or "animal spirits," which was elaborated from the former in the brain where it occupied the cavities of the ventricles, and from thence sent through the nerves to the organs of sensation and volition. It was, therefore, the direct agent of the *anima* or *soul,* the active force of individual consciousness and life, with its power of perception and spontaneous action.

Thus the functions of the living body were divided into two classes, confided to different sets of organs. In the vascular system and the abdominal organs were the processes of organic life maintained and directed by the "*vital spirits,*" the immediate product of the respiration; while in the nervous system, were the acts of ani-

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mal life, bringing the individual into conscious relation with the outer world, through the special agency of the "*animal spirits*," or nerve force generated in the brain. They gave rise to the five senses of sight, smell, hearing, taste and touch, and of voluntary motion; and by its influx into the muscles, it causes their contraction by expanding them laterally and shortening them longitudinally.

These terms, "vital spirits" and "animal spirits," continued in general use down to the seventeenth century, and were used by Haller and others in the eighteenth century; since which time effects formerly attributed to vital spirits has been referred to the so-called *irritability* resident in the tissues.

Previous to the time of the Alexandrian school the blood-vessel leading from the right cavity of the heart to the lungs (the pulmonary artery), was supposed to simply carry blood for the nourishment of that organ, while that connected with the left cavity was considered a special artery to convey to the left ventricle the "pneuma" which it had received from the bronchial tubes, to be disseminated throughout the body by the aorta and its branches. They were peculiar in structure—that leading from the right ventricle to the lungs had thick walls like those of an artery; but as it was supposed to perform the function of a brain, Herophilus gave it the name of "*vena arterialis*," while that leading from the lungs to the left ventricle, and supposed to form the function of an artery as then understood, but having the structure of a vein, was distinguished as the "*arteria venalis*"—names by which they continued to be known down to the seventeenth century.

Erasistratus described very accurately the cardiac and arterial valves, together with their actions, giving to several of them names which they still retain; yet these celebrated anatomists had no definite idea of the circulation of the blood, or even of a constant current, and the blood-vessels were constantly spoken of as "receptacles" of that fluid.

In the Alexandrian school, during the next few centuries, there were many followers of these two great anatomists, but none of them made any material improvements in the knowledge of anatomy and physiology. Afterwards the old prejudices against the dissection of the human body revived, and no progress was made in

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this direction, but rather retrogression was the result, until after the revival of letters in the sixteenth century, except such as was made by Celsus and Galen, and perhaps a few other lights of lesser magnitude that occasionally shone with fitful scintillations, during the long period of the decline of governments, arts, science, literature and civilization. About the time of the Alexandrian anatomists, the medical profession began to be divided into, sects differing in many of their leading principles. From the time of Hippocrates that sect known as the Dogmatists had been the only one of any respectability; but about this time the Empirics (the term being then used in a more respectable sense than now), was founded by Philinus, and flourished for more than three centuries, or until about the time of Galen, in the second century after Christ. They paid particular attention to symptoms, rejecting all theories—not troubling themselves to investigate the causes of disease, but accepting observation and experience as their principal guide.

Yet the term means autopsy or inspection, or examination by one's self; and is certainly one of the important means of progress, and for the testing of theories. By subjecting the art of observation to certain fixed rules, they rendered to science an important service, and at the present time it is the basis of our labors and the touchstone of the conclusions which we draw from them.

While with the principles and practice of that sect there were mixed up many absurdities, they rendered important service by occupying themselves largely in discovering the properties of drugs.

As the sect of the Empirics began to decline, the Methodist sect, founded by Themison of Laodicea, began to flourish, and shortly before the beginning of the Chritian era Cornelius Celsus became one of its most distinguished ornaments and supporters.

He was one of the most celebrated of the medical writers in Rome, of his century; and was called the Roman Hippocrates, because he generally followed the great "Father of Medicine," and introduced the Hippocratic system among the Romans.

While he wrote extensively on other subjects, such as rhetoric, history, philosophy, military tactics, agriculture, etc., he wrote also extensively on medicine; and his works were written in such a clear and succinct, yet such a rhetorical style, that he has been distinguished by the title of "the Cicero of medical science."

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His contributions to anatomical and surgical knowledge are valuable; but I can only take time to briefly allude to a few of them, as found in his only surviving medical work "De Medicina," which is divided into eight books.

He seemed to understand well the anatomy of the trachea, lungs and heart, and the æsophagus, stomach and diaphragm. In osteology, however, the information of Celsus is especially conspicuous. He described the sutures and foraminæ of the cranium, the superior and inferior maxillary bones, and the teeth, as well as the bones of the spine and upper and lower extremities. He defends anatomy against the Empirics, who neglected it, and considered it of little importance.

He probably obtained his principal anatomical information at Alexandria, where he recommended others to go to study this branch.

He improved the operation of lithotomy, and removed cataract by depression. He gave valuable instruction in regard to the use of the trepan, and for many of the operations where surgical interference becomes necessary in obstetric practice. He describes the treatment of wounds of the abdomen and intestines.

His semeiology and clinical medicine are, to a considerable extent, drawn from Hippocrates and the ancient Greeks. He, however, rejects the Hippocratic theory of *critical days.* He recommends frictions, exercise and bathing in chronic affections. He was the first to speak of the utility of analeptic or nutritive clysters; so that our moderns who have lately so urgently recommended this mode of sustaining the wasting strength, have only revived another one of the lost arts.

Celsus described paracentesis abdominis, giving concise instructions as to the details of the operation; and was the first to describe inguinal hernia, expressing himself in the following terms:

"The peritoneum which separates the intestines from the parts above the groin, is subject to be torn, either as the result of inflammation, or the effect of a violent blow; then the epiploon or intestine, being drawn down by its own weight, becomes engaged in the opening, separating gradually the nervous tunic which envelop the testes."

After its reduction he recommends the use of a truss, which he

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says often provokes the adhesion of the membranes, especially in young children. This operation was not improved upon, but rather the reverse was the fact, until the sixteenth century, by Ambrose Pará and Pierre Franco—the latter of whom refutes the error of the ancients relative to the rupture of the peritoneum.

Celsus was the first to give definite rules for the suture of wounds of the abdominal walls, and of the intestines; and also for nephrotomy and cystotomy.

None of the physicians of antiquity possessed more originality and genius, and greater learning than Claudius Galen, or Galenius, the next of any great distinction after Celsus. He was born in Pergamus, in Asia Minor, in the year 130 of the Christian era. In every respect the name of Galen stands preëminent in the history of medicine. He is the central figure representing at once the culmination of medical science and art in the old world, and their preservation for further development under a new civilization.

His father Nico, a very learned man, gave him an excellent education, and initiated him into the mysteries of Aristotelian philosophy.

He afterwards studied philosophy under Gaius, a stoic and epicurean of the Platonic school; and subsequently was a pupil of several of the most eminent teachers in philosophy and various sciences in several different places.

In consequence of a dream his father determined to educate him for the medical profession; after which he was for a time a pupil of Satyrus, a skillful anatomist for the times, of Stratonius, a physician of the Hippocratic school, and of Æschrion, of the Empiric school, from whom he learned the principles of their different systems.

After the death of his father, at the age of twenty-one years, he went to Smyrna to hear the lectures of Pelaps and those of the Platonist Albinus, thence to Corinth to study under Numesianus. He also visited several other places in pursuit of knowledge, not neglecting Alexandria, which was still in some measure the center of the learned world, where he improved himself especially in his anatomical studies. At the age of twenty-eight he returned to his native country, where he practiced till he was thirty-four, when he was induced to take up his residence in the capital of the world, where

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his successful practice, his extreme sagacity in prognosis, and his great knowledge in anatomy were not long in giving him so much celebrity that he became an object of jealousy to all the physicians of Rome. After a temporary absence on account of this feeling, he returned to the city, and was afterwards physician to the imperial family. According to the best authorities he died at about the age of seventy years.

The differences of sentiment which prevailed at that time inspired Galen with a disgust for all sects, and the study he had made of the different systems taught him the defects of each. He observed that they agreed in but one point: "That of converting medicine into a tissue of frivolous subtleties and useless discussions." He led back to the safer road of patient thinking and accurate observation which so much distinguished the Hippocratic school.

Among his principal improvements in anatomy and physiology may be mentioned his description of the skull, which was better than that of any of his predecessors. Besides describing most of the muscles very accurately, he taught the mechanism of locomotion, and that the muscles took the most active part in putting the bones in motion, as so many levers, by flexion and extension.

His description of several parts of the brain have been retained by modern anatomists.

His physiological researches were greatly improved by the practice of vivisections on the lower animals.

He taught that the nerves were derived from the brain and spinal marrow, which was contrary to the teachings of Aristotle, who supposed that they originated in the heart. He described two sets, those of motion and those of sensation; the former being soft and proceeding from the brain, while the others were harder and originated in the spinal marrow.

He describes seven pairs of cerebral, and thirty pairs of spinal nerves, dividing the latter into cervical, dorsal, lumbar, and sacral.

While he distinguished between nerves of sensation and motion, he did not know that each spinal nerve, by its double origin in the anterior and posterior roots, contained both motor and sensitive fibers. He claims to have discovered the ganglions of the nervous

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system; and he had some notion, though not very distinct, of the great sympathetic nerve.

He demonstrated that the nerves were conductors of sensation and motion by dividing the principal nerves of a member in some of the lower animals, showing that they are thus made to lose those functions.

He was acquainted with the glandular system generally, such as the prostatic, salivary and mammary glands, and the liver; but regarded them all as emunctory organs, and their secretions as excrementitial.

He divided the interior of the body into three cavities, namely, abdominal, thoracic and cranial—the last of which the vertebral canal is an extension.

He distinguished the viscera in each from their envelopes, and describes with a great degree of accuracy the viscera of each cavity.

He gives a very faithful and graphic description of the heart and blood-vessels of the fœtus, and the changes which occur after birth, including a description of the *foramen ovale* and the *ductus arteriosus*, and the closure of the former and the obliteration of the latter.

But for the discoveries of Galen in the physiology of the blood-vessels, which have probably had a greater influence in the final solution of the question of the circulation of the blood, and the improved system of pathology and therapeutics consequent thereon, the profession and the world are more greatly indebted than for any of the other of his improvements, that for centuries were considered to be of the greatest importance, but which, under the light of modern science, are found to have contained many fallacies.

The belief that had prevailed for five or six centuries that the arteries were *air tubes*, interposed an impassable obstacle in the way of any further progress in the knowledge of the circulation; but this was removed by the genius of Galen, and from that time the arterial system took its place as one of the systems of blood-vessels, as well as the veins.

The earlier physicians, as well as the cotemporaries of Galen, had accepted implicitly the dogma that "pneuma" or "spirits" only was contained in the arteries in their normal condition, and accounted for the escape of blood from one of them, when wounded

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by the escape first of the pneuma from the wound; and that the tendency to vacuum caused the transfusion of the blood to fill the artery, after which it escaped from the wound.

Galen did not believe this, and his demonstrations were intended to show that the arteries contained blood in their normal condition, and that when it escaped from their wounds, it does so because it was already there. In proof of this he showed that a wound in an artery discharged blood at once, whether the wound be large or small, and wherever situated. He contended that if the artery normally contained "*pneuma,*" with no blood, that if wounded the *pneuma* must have all been discharged from the opening before the blood could arrive at the orifice; but no such change is perceptible, and the flow of the blood is instantaneous, showing that it was contained in the vessels beforehand.

It had also been claimed by those who believe in the doctrine that the arteries contained "pneuma," that the *pulsation* and *muscular* power were due to the influence of this ethereal substance, distributed from the lungs and heart throughout the entire system, by means of its passage through the vessels.

Galen claimed, however, that if such were the fact, an artery containing blood must have previously been emptied of its "vital spirits." In that case the arterial pulsation and muscular power would at once disappear in the parts below, because they were both dependent upon the dissemination of "vital spirits" through the arteries.

But the contrary is the fact; for the artery supplying an entire limb may be shown to be full of blood, yet its trunk and branches are still pulsating, and the limb retains its muscular power. He carries his demonstration still further by applying to an artery two ligatures a little distance apart, and then opening the vessel in the middle, when it was shown to be full of blood.

Galen noted the different qualities of blood found in the veins and arteries, describing that in the veins as being *dark* and *thick,* and *rich in the grosser elements of nutritive* material, while that in the arteries was *thinner, warmer, brighter,* and above all, *spirituous;* that is, contained an abundant supply of *vital spirits,* which it distributed throughout the body.

In this way Galen effected a revolution in physiology hardly

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surpassed in any age before or since. The older doctrine disappeared beforce the convincing force of his arguments and demonstrations; and his assertion that the arteries as well as veins were the normal recipients of the blood became the established belief of the medical world.

Notwithstanding this long stride towards the complete solution of the problem of the circulation, yet Galen was far from reaching that goal. While he taught that nutrition and spirituous substances were distributed throughout the system, and that by a process of transudation or osmosis, such material as each particular part needed for its nourishment, by a sort of elective attraction inherent in the tissues; yet he had no idea of a continuous current in one direction. The vessels were merely "receptacles" of the blood, and the motion of the blood therein was something like the ebb and flow, or a *to-and-fro* movement.

It would be interesting to examine in detail the investigations of Galen of the physiological functions of respiration, digestion, sanguification and nutrition, had we the time at our disposal; but we must be content, for the present, with the general statement that while there were of course many errors in his doctrines on each of these subjects, as would necessarily follow from his ignorance of the circulation of the blood, yet they contain so many gems of truth, so much ingenious reasoning, with logical deduction, and withal so far in advance of both his predecessors and cotemporaries, that one who takes the trouble to study his works can not but be deeply impressed with a sense of his greatness.

He lived at a time when the Roman empire had reached the zenith of its prosperity and glory; and he was a representative of the science and art of medicine worthy of his time. But his age was followed by the degeneration of imperial greatness and splendor, and germs of disintegration and decay soon developed and arrested further progress, and sounded the death-knell of science and literature, as well as of political and material prosperity—all of which were buried under the long centuries of the dark ages, not to be resurrected until the dawn of civilization in the fifteenth and sixteenth centuries.

Although it would prove an interesting subject to examine the many beacon lights that have shone to enlighten medical science

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from those centuries to the present time, and note the self-sacrificing devotion of great and good men which has resulted in relieving humanity from a vast amount of suffering, and in adding several years to the average length of human life; but the theme is inexhaustible, and I can not close with more appropriate language, perhaps, than that of an eminent divine of the present day, who fully appreciates the labors and sacrifices of the medical profession, and who has great faith in the utopian idea that the time will come "when there will be an atropine for every morphia, a magnesia for every acid, a cinchona for every putrescence, and for every physical ill a chemical reagent." These are his words:

"I rejoice that the poorest classes get advantage of highest medical skill. No excuse now for any man's not having scientific attendance. Dispensaries and infirmaries everywhere under the the control of the best doctors—some of them poorly paid, some of them not paid at all.

"A half starved woman comes out from the low tenement house into the dispensary and unwraps the rags from her babe, a bundle of ulcers and rheum and pustules; and over that little sufferer bends the accumulated wisdom of the ages, from Æsculapius down to last week's autopsy. In one dispensary, in one year, one hundred and fifty thousand prescriptions were issued.

"Then the physicians of this country do more missionary work without charge than all other professionals put together.

"From the concert room, from the merry party, from the comfortable couch on a cold night, when the thermometer is five degrees below zero, the doctor must go right away—he must always go right away. And how many hard and unjust things are said about physicians. There are many who blame the doctor because the people die, forgetting the divine enactment: 'It is appointed unto all men once to die.'

"Men of my profession often greet men of the medical profession. We shake hands across the cradle of suffering infancy. We join each other in an attempt to solace where the paroxysm of grief demands an anodyne as well as a prayer. We look into each other's sympathetic faces through the dusk as the night of death is falling in the sick room. You, doctor, are the first and last earthly friend.

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You stand at the gates of life when we enter this world, and you stand at the gates of death when we go out of it.

"In the closing moments of our earthly existence, when the hand of wife or mother or sister or daughter shall hold our right hand, it will give strength to our dying moments if we can feel the tips of your fingers along the pulse of the left wrist.

"God bless the doctors all the world over, and help the people to better appreciate them, and hasten the time when the last bitter draught shall be administered, and the last wound healed, and all sorrow and sighing shall forever be done away."

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SOME REMARKS ON THE RELATIONS AND DUTIES OF THE PHYSICIAN TO THE PUBLIC.

BY J. W. MILAM, M. D., BRUCEVILLE.

In these brief remarks the subject shall not be treated in the light of mere self interest. Such treatment would best serve the desires of many. I am well aware that there are many men in our profession who are not thoughtful—more who are not honest, and not a few who are neither thoughtful nor honest.

Rogues abound in the *four* "learned professions"—quack doctors—hypocritical preachers—tricky lawyers—immoral educators. To these classes no appeal is effective but legal restraint and popular disfavor.

To the majority of the members of medical societies I feel that I can address myself, pleading the "greatest good to the greatest number." The foremost men and the most unselfish in the profession generally attach themselves to the medical societies; and while in degree of desire and willingness to work each individual differs from all the others, yet we have a common purpose to alleviate suffering, to advance science and to improve our capacity to do effectual service to mankind.

My subject was suggested by the apparent failure of the present law regarding reports of births, deaths, and diseases dangerous to public health. That the law has failed to even approximately accomplish the intended purpose most of you will admit. Possibly a few physicians in any given county have faithfully reported all cases required by the law. Others have reported enough cases to blind the authorities, and still others have made reports, *spasmodically at times*, but have finally ceased to pay any attention to the requirements of the act. The statistics acquired from such reports are

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worse than valueless. The law is not simply a dead letter, it is a positive evil; for, besides fostering false statistics, it costs the reporting doctors annoyance and waste of time; it costs the non-reporting doctors uneasiness lest they be prosecuted, and it costs the State money to support sinecures in the way of local health officers. Who is to blame? First, the people, for ever electing a physician to the Legislature.

I had the honor of being the first to express in the Knox County Medical Society the earnest conviction that the people in general and the lawyers and law-makers in particular, needed the emphatic assurance that the doctors as a class neither desired nor asked any protection, class legislation, information, assistance or favors of any kind whatever, from the Indiana Legislature. And I had the pleasure of the unanimous approval and sanction of the society.

And yet, biennially, a few "political doctors" are sent to Indianapolis as Senators and Representatives, and they begin to introduce bills, and the laity in both branches begin to ask them: "Well, what do you doctors want this year?" For the sake of the glory of securing the passage of some sort of bill included under the head of medical legislation a few of these "political doctors" indorsed, and an ignorant Legislature passed, a bill which required all the physicians of the State to make reports involving expense, trouble and inconvenience without remuneration. Then some doctors began reporting and have faithfully continued. Some began reporting, but got tired and quit. Some made reports of about one-half or one-third of their cases. Some reported not at all. Could the law have been enforced to the punishment of the delinquent? Perhaps. Could it have been so enforced as to have made the reports and statistics derived therefrom valuable and reliable? No, never! Why, in our county, men who were too cowardly to defy the law themselves, used pursuasion to induce other doctors to defy it. Not half the required cases have been reported. Even the list of practicing physicians furnished from our county to the State Board of Health is grossly inaccurate. Men are reported as practicing who have been gone for years; some moved out West; some moved to eternity. Some of our best physicians are omitted from the list, and eclectics are classed as regulars, etc. All the fault does

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not lie in the execution of the law, but much of it in the nature of the enactments.

What is our duty in this dilemma? Let the legislatures alone. Neither ask them for enactments nor repeals. Educate the public. Let it be known to all the people that the present law is a gross imposition on the people and on us—costing us annoyance and costing them and us money; all for the purpose of misleading the *un*fortunate few who receive the reports sent out by the State Board of Health.

I do not attack the State Board of Health. It is remarkable how well they manage to do with the material at hand. Their reports are interesting and, except those of which I am speaking, valuable.

Let me not be understood as apologising for or defending the non-reporting doctors. They ought to have faithfully obeyed the law. Good citizens will not be law-breakers. Even a bad law—yea, even a vicious law should be executed that the very atrocity of its effects may compel its repeal.

But until the day of the millennium faulty laws will be generally disregarded. Let us all faithfully comply with the existing laws, while we educate the public in its defects. Let us take pains to inform our clients that health statistics, if correct, are invaluable; that sanitary science is the grandest of all earthly sciences; that medical legislation, correct statistics, well organized health boards, and the general diffusion of hygienic information would wipe out the need for half the doctors of the land.

Educate the people and let the people manage the law-makers. Give them to understand that quack nostrums, cure-alls, electricity doctors and adverstising and traveling specialists, all tend to increase the income and enhance the reputation of reputable physicians.

You all recognize it as your duty to the families under your care to warn and protect them from infectious diseases and unhygienic habits. It is just as much your duty to inform them whereby they can acquire the knowledge and legal protection which shall guard them from dangers as a general public. Interest the laity in these subjects, but keep the doctors out of the Assembly; or, if one slips

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in unawares, muzzle him at once on medico-legal questions if you can.

Whenever our advice is asked as to what we think best for the interests of the general public we are all ready to answer to the best of our capacity, but when asked what we want in the way of protection to the legitimate practitioners of medicine we should either treat the questioner with silent contempt or else unbottle the vials of indignation on his empty head.

In all rural communities, and, in fact, in almost *all* localities of democratic America the "Doctor" is the autocrat. His opinions come nearer being the "law and the gospel" than those of any other man. We can mould the public mind very largely on almost all topics. The quack has the ear of the "long-haired men and the short-haired women," but the reputable physician has the firmest hold on the consciences of all others. Our responsibility is great; our opportunities are glorious. We must not let them fall into "innocuous desuetude."

[This paper was read to the Knox County Medical Society and referred to the State society. F. W. BEARD, Secretary.]

DISCUSSION OF THE PAPER.

Dr. Hibberd.—Mr. President, it seems to me that there ought to be a word said, but I do not like to take up all the time with my talk. While the facts stated may be true, his reasoning is faulty. Lay it down that the thing for doctors to do is to educate the public, and I will undertake to say that there is no more efficient or less expensive way of educating the public to the necessity of duty—their duty under a law of this kind—than the provisions of the law themselves. It is badly done, but we will never get it rightly done until we make an effort. Every human being must crawl before he can walk or run. We are crawling; we are in our infancy. We are crawling about in the mud and dark, but as sure as the sun shines the time will come when it will be done, and will be of infinite value. I will join with him as to the impropriety of doctors generally being in the Legislature, but I understand that this is the best that could be done, and it is a foundation upon which we build. While the foundation is not as perfect as we would have it, let us

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not throw it away while it is susceptible of improvement. In the matter of reporting births we should have almost absolute accuracy, as almost every doctor is proud of his obstetrical business. I am sorry to say that a good many doctors are the reverse in regard to the deaths—they are loath to report them. There is one way, and a very simple one, by which we can secure returns of deaths. Don't allow any body buried without a burial permit to the undertaker. The undertaker would see to it to keep himself free from penalty. The only difficulty is to tell where the authority is.

Dr. Beard.—Mr. President, I am glad to have a report of the practical working of this law, that is the way we must get at the results. I am well aware that the law in regard to statistics is a dead letter, and is giving the profession a considerable amount of labor. It is leading us into error. One locality reports faithfully, and another does not. These facts should be reported here and discussed, that the laws may be amended. Dr. Hibberd's idea of the undertaker is the right one.

Dr. Graham.—Mr. President, I think this law was intended for a good purpose, and would be a good law with one or two modifications. These reports compiled by the secretary of the county board are liable sometime to be burned up. I think they ought to be kept and filed as an official record. I think there should be some small fee attached for making these reports.

Dr. Stewart.—Mr. President, I am in sympathy with the law as it is I believe the law has done a great deal of good in the State of Indiana, and I have had a pretty accurate observation of the workings of the law, as I was health officer in Floyd county for three years, and there I think the reports were nearly accurate. How they are to-day I don't know. My friend Dr. Esley is the present health officer. I am confident our reports were well made. If every county in the State had a good county medical society, and the right men urged the importance of reporting all these matters, we would have a great deal better report than we do. I have found that the best men in the profession make reports of deaths and all, they don't shirk anything. As to the labor, I don't think there is much in that. I think that is a poor excuse. Every doctor ought to take interest enough in the medical profession to do that much. [Applause.]

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In regard to obstetrical women, I must say for them that they are particular about making their reports. They come for miles to make them. They are proud of their calling; they enjoy it. My opinion is that the law is not as lame as the men who are executing it.

Dr. Hobbs.—Mr. President, I desire to say that this report is a very great surprise to me, but I suppose it applies only to particular localities. I am very sure that in the counties in our part of our State reports are very faithfully made, and the law is faithfully executed. The paper would seem to imply that there was no exception; that the failure of the law extended over every part of the State. I wish to exonerate my own county from the blame that the paper seems to carry with it. I think it would be a great mistake to abolish our medical health legislation. This law is not what we tried to procure, but it is the best we can get. It is only a small beginning, but like everything else it must have that beginning. Let us believe that the conditions described apply peculiarly to Knox county. I have heard from Knox county before. [Laughter.] I know about where it is, and I think I know the politics of that county. [Laughter.]

Dr. Woodburn.—Mr. President, I think it would be doing harm to let it go out that we endorse the paper. The law is a pretty good one. It is lame in some particulars, but we ought not to endorse the paper at all.

Dr. Boyd.—Mr. President, I want to say that I am heartily in favor of having this paper published in the proceedings, because it is the best place to keep it from being read.

Dr. Cook.—Mr. President, I am opposed to the paper, and opposed to its reference for publication. I myself have faithfully and honestly tried to comply with the law, and I think if that were done by all physicians it would be all right.

Dr. ———, of Jackson County.—Mr. President, my politics in Jackson county are the same as in Knox. I endorse that paper. This law has only created another lot of officials. The reports in our county are very impractical. They are not full at all. A great many obstetrical cases are not reported, and a great many deaths are not reported. I don't know but I miss some myself—I don't mean deaths, I never have them. [Laughter.] Just as soon as we

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acknowledge before the people that we have got to throw the strong arm of the law around our profession to support it, just so we acknowledge we are on brittle ground. I am in favor of the Knox county business, politics and all.

Dr. Beard.—Mr. President, I want to say a word as to the erroneous idea that this society must be responsible for the views of any man who reads a paper here. Because the majority do not agree with a paper is no reason why we should not publish it. We want both sides published. If a man comes with an honest opinion let him be responsible.

Dr. Milam.—Mr. President, it is very immaterial to me whether you publish my paper or not. It is very immaterial to me whether you approve of it or not. I state facts as I know them. I state facts as they exist in the territory that I am acquainted with. I know in our county not one-half the cases are reported, and I know that some of the men with the largest practice don't report anything; and I know that in our county the health officer was once a man who had of necessity dropped from the medical society, and once a man who never was accepted by the medical society. I know by what I hear that the same state of affairs exists in some other counties. Some counties may have extraordinarily good health officers. I knew when I read the paper that there would be a howl. [Laughter.] Political doctors are political doctors. There are a good many here who have been in the Legislature, and more who want to go. Didn't you see the interest the doctors took in that State House sanitary business? It is very plain to be seen what is the trouble. If there was anything in the paper that indicated that I did not believe in medical legislation I don't know where it was. But because we believe in medical legislation I don't think we should approve and adopt all sorts. As to the political question I am happy to say that I am of opposite politics to those of my county. I know our county is odious because of the $80,000 defalcation, but I know that the doctors, Democrats and Republicans, of Knox county are as good as the average doctor anywhere. I don't claim anything more, and do not admit anything less.

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ON WASHING OUT THE STOMACH

AS A RELIEF AND CURE IN CERTAIN CASES OF OBSTRUCTION OF THE BOWELS.

BY GUIDO BELL, M. D., INDIANAPOLIS.

Obstructions of the bowels is of common occurrence, and yields in ordinary cases to cathartics, but the practitioner is not unfrequently embarrassed by the obstinacy of his case and by the uncertainty of his diagnosis in regard to the place and nature of the occlusion. If there be simple obstruction or moderate stenosis without inflammation, ulceration or gangrene a good physic is the proper ordination. In more serious cases, where nothing but a symptomatic diagnosis can be ascertained, opium or morphia have to be resorted to and injections into the rectum, especially after the method of Hegar by means of a long tube with a funnel. If the life becomes endangered the only rational treatment is enterotomy, that means to open the intestine directly above the place of obstruction and to make an artificial anus. In many cases the intestinal canal becomes then permeable as soon as the feces and gases have escaped, and the artificial anus heals without delay; in other cases reconvalescence lasts longer and requires an after treatment. Dr. George Cook, of this city, divides the cases of obstruction in such, above and below the cœcal valve, and recommends the treatment from the respective ends of the intestinal canal. In recent days laparotomy has been performed to reach the place of obstruction and to restore permeability by removing the various mechanical hindrances. But no sensible surgeon will undertake this task without knowing the cause and place of obstruction. Whoever has seen some post mortems will recollect the difficulty it has, even to the experienced

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anatomist, to find the closed intestine even in corpses. Laparotomy must be restricted to a few cases.

The practitioner meets now and then with cases where a diagnosis can not be made, where no treatment brings relief, where the misery of the patient is pitiable, but the danger of life not imminent. For such cases I would recommend the washing out the stomach as a relief in all cases, and as a curative in certain selected ones.

Since this was written, I have found in the January number of the *American Journal of Medical Sciences* an article of Dr. Illoway, where the force-pump has been highly recommended, but in the very next number Dr. Randolph Winslow has censured this method unfavorably, and also that of Jonathan Hutchinson, which Dr. Comingore, of this city, has tried lately to revive in a modified style. Dr. Winslow in his very ably written article refers to Kussmaul's method of washing out the stomach, and calls it "harmless and appropriate" in certain cases.

A stomach-probe connected with a rubber tube and a funnel is introduced through the mouth to the stomach. An elastic catheter will do, too, sometimes, as Dr. Harvey states. If the funnel is lowered, all the contents will escape, and if raised, the stomach can be filled with water and emptied again by lowering the funnel.

There is much gagging for the first time, but as relief follows in all cases instantly, the patient don't object much to a reapplication. It might be done every hour or every three hours, or more seldom.

Prof. Kussmaul, in numbers 42 and 43, 1884, of Berlin klin. Wochenschr, publishes the exhaustive history of two cases, where a bloody operation was contemplated as the only means of relief, but where the washing out of the stomach was followed with a full and speedy cure. In a third case of twenty-three days' standing, the permeability of the intestines was restored, but not the health. In a private letter from him last February, he says, that he had only one case since a successful one, but good reports from friends. Dr. Hasenclever reports four cases where the stercoraceous vomiting was checked, but the obstruction not removed. Prof. Bardeleben says he made it a rule to wash out the stomach in every case, although he had only relief, no cure in his cases, but we should not forget, he adds, that in consequence of such relief an operation

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might be performed too late. It is like hernia—we can operate too late,never too soon.

Prof. Kussmaul himself wants it distinctly understood that his method can not outrank colotomy or laparotomy, but that it deserves a place in the medical practice.

In all cases of uncontrollable emesis we should keep on with this method as long as there is no imminent danger, and as long as we do not know either the place or the cause of the obstruction. As a symtomatic treatment it is always a success, and as a curative it ranks with colotomy and laparotomy, with the great advantage of excluding every danger.

Prof. Kussmaul explains the actions of his method mechanically, and refers to a case of colotomy, where the escape of pancreatic juice proved the opening high up, although the obstruction was low down in the canal, and where he had the same favorable result, as with washing the stomach. He says with the removal of the abundant quantities of gases and fæces gives room to the intussuscepted pressed, bent or twisted intestine to return to a natural position, the lesser pressure allows other movements besides the increased peristaltic action—such movements intended to change the unnatural position of the obstructed intestine and finally the peristaltic action itself is lessened to a nearly normal state.

Experienced practitioners recognize these vehement peristaltic motions as most dangerous in all cases of intestinal obstruction, but especially in invagination. In cases where purgatives had increased the peristaltic action the intussuscepted intestine could be observed coming lower down in the rectum, and retreating after the use of opium.

In one of my cases the introduction of the stomach probe acted as a "mechanical emetic," as Dr. Winslow calls it. Dr. Woodburn, of this city, recommends in certain cases of stercoresis an ordinary emetic, and has a good reason for it.

Gentlemen, I have omitted the history of cases read in our county society for want of time, but I will refer to one case as a proof of my theory. A young, delicate girl of fifteen years had an incarcerated omentum in the right groin, and was suffering with pains and constipation for three days. Then the tumor was diminished by taxis to a minimum, but all symptoms of obstructions kept

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on to the seventh day. When tenderness and prostration increased and the vomits became feculent, I introduced the stomach tube, but on account of the chocking effect I had to remove it. A few minutes afterward I tried it again, with the same result only a tumbler full of bilious fluid had escaped. Nevertheless the girl had four large passages within ten minutes afterward. A full recovery followed.

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DR. W. H. MYERS AND THE STATE MEDICAL SOCIETY.

[REPLY OF DR. C. B. STEMEN TO SAME.]

At the last meeting of the Indiana State Medical Society we read a paper on "Trephining the Spine, with a Report of Three Cases." Dr. W. H. Myers, of this city, stated that "one of the cases reported was an imposition upon the society, that no such operation had been made, and exhibited drawings which he claimed he had taken by consent of the coroner at the post-mortem, which, he asserted, clearly proved that we had not, as claimed, trephined the spine at all."

We did not think it necessary at the time to make any defense to the above statements, and only referred to the gentleman's reputation for truth and veracity, which is well known to a majority of the members of the State Society. We find the following in the May number of the *Indiana Medical Journal.* We do not think the statement unfair, and commend the *Journal* for its candor and fairness:

"Before the annual volume of "Transactions of the Indiana State Medical Society" is published, we desire to call the attention of the committee on publication to a matter which, it seems to us, should command its serious attention. We allude to the discussion of Dr. Stemen's paper by Dr. Myers, in which the latter denounced the former as having perpetrated a fraud upon the Society by claiming that he had, a year or so ago, trephined the spine of a man living in Fort Wayne. Dr. Myers also exhibited drawings which he asserted were taken by consent of the coroner, from the fractured spine of the unfortunate man at the post mortem, and which clearly showed (admitting the drawings to be correct), that the vertebra had not been trephined at all. Now, it is plain that either Dr. Myers made a false and malicious statement to the Society for the purpose of damaging the professional standing of Dr. Stemen, or

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the latter attempted to impose upon the Society by falsely claiming to have performed a difficult operation. In either case the crime is one which merits the scorn of every honest physician, and the offender should be given to understand that the State Society no longer desires the doubtful honor of his membership. It is to be regretted that the Society did not at once appoint a committee of good men and true to investigate the charge of Dr. Myers, and it is also a matter of regret, if the charge is not true, that Dr. Stemen did not demand an immediate investigation.

"But, inasmuch as neither of these things were done, the publishing committee should not, and we trust will not, take any chances of making the Indiana Medical Society the laughing stock of the whole country. Unless the author of the paper in question can produce satisfactory evidence that the disputed operation was actually performed, his paper should not appear in the Transactions of the Indiana Medical Society. *Fiat justitia ruat cœlum.*

"The Indiana State Medical Society can not by its silence upon this most serious matter assent to the perpetration of such outrages upon personal and professional honor. Small offenses against the profession or against a professional brother may sometime with propriety be passed in silence; but deliberate lying to injure a rival, or seeking to make the publication of a scientific body the medium through which to publish mythical surgical operations, are offenses of such grave character, and so far reaching their demoralizing influences, that no medical society composed of honorable men can afford to let such offenders escape without punishment."

And also in the *New York Medical Journal* the following:

"But the climax is reached when we come to the tactics of a member who read a paper on trephining the vertebra, and been held up to the meeting by a practitioner from his own town as having merely pretended to do the operation in one of the cases he had reported, when in fact he had only "scraped the spinous process," sought for no other means of refuting such a damaging charge than an allusion to his adversary's character for veracity. No actual "chunk of old red sandstone" seems to have been thrown about in the meeting, but we trust that at future meetings nothing so suggestive of such an occurrence will happen."

We shall make no personal attack upon Dr. Myers, but will publish a few plain facts, which we trust the above named journals will publish. The following is the statement of Dr. J. S. Gregg, president of the State Society, who is well known to all of the members, and whose reputation is such that no one will question the truthfulness of his statement:

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FORT WAYNE, IND., June 28, 1885.

C. B. Stemen, M. D.:

DEAR DOCTOR—In compliance with your request for a statement of the facts in connection with the case of Carl Someskie, on whose spine you operated on the 17th day of September, 1883, so far as my observations at the time allow me to give them, and also the result of the operation as shown by the symptoms, and the completeness of it as found on inspection at the post mortem examination, I cheerfully comply and submit to you the following:

I was present at the time above stated during the operation of trephining the spine of the said Carl Someskie, and believe that it was skillfully and completely performed, and resulted in restoring to their normal condition the displaced (depressed) vertebra, and in relieving, to some extent, at least, the compression of the spinal cord, as indicated by the restoration of some degree of suspended action of the abdominal muscles in respiration, the detrusive power of the bladder to some extent, and the return of some sensation to the lower parts of the body. I was also present, as a witness, at the coroner's inquest of the body of said Carl Someskie, held on the 27th day of the same month, and found on careful inspection that in the operation the trephine had penetrated the lamina of one of the vertebra to its spinal foramen, exposing the dura mater of the cord, and affording facility for the use of the elevator for the restoration to proper position of the depressed vertebra. It is true that there was not complete removal of the entire circular disk of bone at the bottom of the opening made by the trephine, there remaining a thin segment of bone across the upper portion of the caliber of the opening, but over the lower segment the opening was complete and exposed the cord, as stated in the coroner's report, thus facilitating the successful use of the elevator.

I further give it as my opinion that had the operation been performed at an earlier period, before any serious disorganization had resulted from long continued compression of the cord at the point of fracture, the chances for permanent benefit would have been much more favorable.

I believe the operation was, under the circumstances, justifiable, and the only one offering the slightest hope for relief, but it was unfortunately deferred too long for any permanent good to result therefrom.

Yours truly,

J. S. GREGG, M. D.

The following is the statement of Dr. George T. Bruebach, one of the leading German physicians of this city, who was present at the operation:

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FORT WAYNE, IND., July 29, 1885.

C. B. Stemen, M. D.:

DEAR DOCTOR—According to your wish I give a statement of the observations which I have made in regard to the performance and results of the operation of trephining the spine of Carl Someskie, on September 17, 1883.

1. The trephine had penetrated the argus of one of the fractured vertebræ to the foramen spinalis.

2. The dura mater of the medulla spinalis became exposed to view after trephining.

3. By the use of an elevator the depressed vertebra was replaced to normal position.

4. Judging from the immediate results afforded by the operation; i. e., partial restoration of function of urinary bladder, partial return of sensation of lower part of the body and easier respiration visible immediately after operation, I believe that a better success, at least a partial recovery would have resulted if it had been performed at an earlier time, when the fractured and depressed vertebræ by their long contined pressure upon the spinal cord could not not have effected disorganization and reduced general vitality to a low degree. Yours very truly, G. T. BRUEBACH, M. D.

Dr. C. M. Fiser who was present corroborates the statement made by Dr. Bruebach.

FORT WAYNE, IND., July 30, 1885.

I have read the above statement of Dr. G. T. Bruebach, and fully concur in said statement. I was preeent at the operation.

C. M. FISER, M. D.

Dr. W. H. Harper, of Lima, Ohio, one of the leading surgeons in Northwestern Ohio makes the following statement:

LIMA, OHIO, July 28, 1885.

While at Fort Wayne, Ind., spending a day, September 17th, 1883, I was invited to see Prof. C. B. Stemen trephine the spinal column of Carl Someskie, whose spine had been fractured some weeks before. There was an entire paralysis of the lower parts of the body, including bladder and bowels, and the respiration about double the usual frequency.

The spine was trephined and a portion of the vertebræ removed and some parts elevated. I am unable to say all the spicula were removed, but some were. After the operation the common remark was made, "the patient breathes slower and deeper." In other respects the patient remained in about his condition as before operation.

W. H. HARPER, M. D.

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The following is the statement of Dr. A. D. VanBuskirk, who was present and assisted in the operation:

FORT WAYNE, IND., July 30, 1885.

DR. STEMEN: You ask me to say whether you "operated" on the spine of Carl Someskie. The operation consisted of four steps; first, division of soft parts; second, trephining; third, introduction of elevator; fourth, replacing fragments. The first three steps were performed as skillfully and carefully as any surgeon need require. As to whether any fragments were replaced or elevated I could neither affirm or deny, for as all honest surgeons know, these are difficult matters to settle. I think Dr. Stemen did everything that any other surgeon would have done under the same circumstances.

A. E. VAN BUSKIRK, M. D.

The following is the statement of H. G. Gould, M. D., who was present and witnessed the operation:

FORT WAYNE, IND., July 30, 1885.

Dr. C. B. Stemen:

DEAR SIR: Yours received, and in compliance with your request, would say: that I was at the St. Joseph's Hospital in September, 1883, and witnessed you operate on a Pole named Carl Someskie, for fractures of the vertebræ. After the patient was ætherized, you trephined the fractured vertebræ, removing the "Button" and several speculæ of bone, exposing to view the spinal cord. After this, you raised the depression arch with an elevator and applied the proper dressings. Immediately after the operation, the patient breathed much deeper and slower. Later, there was a partial restoration of the functions of the bowels and bladder. It was the general opinion that, had the operation been earlier performed, he would have made, if not complete, a partial recovery.

Very truly yours, H. C. GOULD, M. D.

Report of official post mortem by K. K. Wheelock, M. D., coroner, and A. J. Laubach, M. D.:

Examination of the body of the spine showed a fracture about the tenth dorsal vertebræ, with depression of the body of the vertebræ, so that the spinal canal was obstructed. Beside the fracture and comminution of the bodies of the tenth and eleventh vertebræ, there was a circular opening through the lamina of the vertebræ into the spinal canal. At the bottom of the circular opening, which had been made by trephine, there was osseous matter, and the opening was not completely through to the cord; but below the circular opening, toward the lumbar region, the operation was complete and

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exposed the cord. There was complete degeneration of the spinal cord at the point of depression and below it.

We will now give the official report of the coroner:

In the matter of the inquest on the body of CARL SOMESKIE.	Wayne Township, ALLEN COUNTY, STATE OF INDIANA.

I, Kent K. Wheelock, Coroner of Allen county, State of Indiana, after having heard the evidence and examined the body, do find that the deceased came to his death by reason of injuries accidentally sustained in having his spine fractured and crushed at Olds' spoke factory.

Have inquired carefully into the effect which an operation of trephining may have had upon the deceased, and am satisfied that it did not form an element in the causation of death.

That the true name of the deceased is as above set forth, to-wit: Carl Someskie; that at the time of his death he was about forty years of age; that he was of dark complexion, five feet and six inches high. That he was dressed in his burial clothes.

Given under my hand and seal this first day of October, 1883.

KENT K. WHEELOCK, Coroner of Allen County, Ind.

We shall, with the above statements, be content to have the profession judge whether we practiced an imposition on the State Society, and whether the operation was only the "scraping of the spinous processes," and whether the drawings presented were correct. We regret very much that the circumstances are such as to call out any defence. If the charges had been made in this community no defence would have been required, but since the charges have been published it was thought by myself and friends proper to make a full statement of the facts in the case.

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THE MEDICAL PROPERTIES OF FRAXINUS AMERICANUS

BY JAMES I. ROOKER, M. D.

The great aim of the physician should be (1) to prevent diseases; (2) to accomplish their cure, and (3) to relieve pain. It should make no difference where his remedies are found, whether in the the animal, the vegetable or the mineral kingdom. This broad view is held by the regular profession only. All other pretended schools of medicine are bound down by narrow and illogical rules. The Eclectic or Physio Meds discard all minerals. To use mercurials would be an unpardonable sin. The Hydropathists rely on water for the treatment of all diseases, while the Homœopathist has no rational treatment at all except as it takes it from the regular profession. But to return to the great purpose of the physician—that of preventing, curing and relieving pain. What a noble calling and how God-like! We read in Holy Writ:

1. "Honor a physician with the honor due unto him for the uses which ye may have of him."

2. "For of the Most High cometh healing, and he shall receive honor of the king."

3. "The skill of the physician shall lift up his head, and in the sight of great men he shall be in admiration."

4. "The Lord has created medicine out of the earth, and he that is wise will not abhor them."

5. "Was not the water made sweet with wood that the virtue thereof might be known?"

6. "And He hath given men skill that he might be honored in His marvelous works."

7. "With such doeth He heal [men] and taketh away their pains."

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8. "Of such doth the apothecary make a confection, and of his works there is no end; and from him is peace over all the earth."

9. "Then give place to the physician, for the Lord hath created him; let him not go from thee for thou hast need of him."

The words allopathy, homœopathy, hydropathy, physio med., eclectic or piss doctor do not appear within the lids of the Bible. Nothing but physician, and gentlemen of the Indiana State Medical Society, we claim to be nothing but physicians. We assemble here from year to year for the purpose of receiving and attempting to impart something new to each other, and could I be able to find anything in nature that is found to be of the least benefit for suffering humanity, I have accomplished all I could ask. And it is this, gentlemen, that has brought me here to-day, and if what I have to offer is proved to be of no benefit, let it be buried in forgetfulness.

Some time ago, while watching a man cut a ditch through a low, swampy piece of land he threw to the surface a root with a thick, fleshy bark, and of intensely bitter, aromatic taste. On inquiry I found the root came from a large white ash, the tree growing to the height of eighty or ninety feet. It is usually found in such localities. I examined the United States Dispensatory, but could find nothing on the subject of the white ash or any other ash. I then took some of the roots to Ward Bros., of Indianapolis, and had them prepare a tincture. Last spring I furnished the State Pharmaceutical Society specimens of the bark and some of Ward Brothers', tincture for examination, and I believe there was a committee appointed to make an investigation as to its medical properties. I then met young Mr. Lilly, of the distinguished firm of Eli Lilly & Co., of Indianapolis, and he took a quantity of the bark and prepared a number of specimens, consisting of a fluid extract, elixir, wine, gelatin-coated pills and solid extracts, which I here present to you. The tincture prepared by the Ward Bros. is so very bitter that it is difficult to get patients to take it. The fluid extract, elixir and gelatin-coated pills are the best preparations. The wine, like the tincture, is intensely bitter and disagreeable to take.

The first case I used this remedy on was myself. I was in my

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usual health at the time. I commenced with a teaspoonful of the Ward's tincture. The first impression on taking it was a warm sensation in the stomach, followed by a slight acceleration of the pulse—four or five beats to the minute. This effect would appear to last about one hour, leaving me slightly thirsty, with increased appetite. On increasing the tincture to a tablespoonful it produced nausea, with increased circulation, moisture of the skin and looseness of the bowels, leaving me thirsty with a desire for food and better digestion. I then tried the fluid extract prepared by Lilly & Co. I found this much better in taste, and not requiring so large a dose. I commenced with twenty to thirty drops every hour. It had the same effect as the tincture. In large doses it produced nausea, with a burning sensation in the stomach, increased flow of saliva, and a laxative effect on the bowels with moisture of the skin. In smaller doses it would produce an increased flow of urine.

The second case upon which I used this remedy was my wife, who has been for many years a sufferer from indigestion, loss of appetite, constipation and anæmia. I commenced with twenty-five drops of Lilly's fluid extract half an hour before each meal. In about ten days I detected a great improvement in her general health, appetite and digestion, and to-day she is in better health than she has been for eight years previous.

The third case was a farmer forty years of age, a resident on the bank of White river, and a sufferer from chronic malaria with enlargement of the spleen, loss of appetite, torpidity of the bowels and liver, with great debility. I prescribed thirty drops of Lilly's fluid extract, to be taken half an hour before each meal. He returned to my office in two weeks much improved, and stated that he wanted some more of the same kind of medicine, as it had done him more good than anything he had ever taken before.

The fourth case was Mrs. M. I was called to see her August 31, 1885. She had been married one year. Commenced coughing and losing flesh about six months ago. Consumption, hereditary on father's side. Had been under the treatment of other physicians. Been taking extract of malt with codliver oil without apparent effect. Present condition, confined to bed all the time, coughing badly, with muco-purulent expectoration, with great loss of flesh, hectic fever and night sweats. Physical examination revealed a

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small cavity near the apex of the right lung, with dullness and tuburcular deposit at the apex of the left lung. The former treatment was continued. In addition to this I gave her three-grain doses gelatin-coated pills of Fraxinus Americanus, to be taken one hour before each of the three meals. Without going into further details of this case, I will state that she commenced improving. She now resides in the western part of the State. I received a letter from her husband a few weeks ago, informing me that his wife was in perfect health, weighing 130 pounds—as much as she ever weighed before, and that they attributed her recovery to my treatment.

The fifth case. I was called to see Mrs. L. Roberts, aged 18; married and the mother of one child. Consumption in her family is markedly hereditary, having lost her mother and two or three sisters. Shortly after her confinement, about one year ago, she was taken with a hacking cough, with loss of flesh, with chills and night sweats. In short, all the symptoms of phthisis of the second stage. She placed herself under the noted quack, the lung renovator of this city. After taking his medicine and being fleeced out of $25, she came under my care. I found her in very much the same condition as I did that of Mrs. M. This was about four months ago. She was at first placed on emulsion of codliver oil with the hypophosphites of lime and soda. This treatment was continued for about one month, with no apparent benefit. I then commenced giving three-grain doses gelatin-coated pills of the Fraxinus Americanus before each meal, or three times a day, one hour before taking the codliver oil. She commenced improving at once, and to-day has regained her former flesh and strength, and is doing her own house work.

I am not able to account for this. Possibly they might have done as well without these pills in time as with them. Possibly the pills acted as a tonic to the stomach, assisting in the digestion of the codliver oil, and possibly we may find in this remedy something that has the power to distroy the germs of phthisis.

Time will only tell. These cases have given me quite a reputation in my neighborhood in the treatment of consumption. I have three other cases under my care at this time, with all improving. I am also treating three cases of rheumatism with this drug,

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and with apparent success. I furnished some of Ward's tincture to my friend Dr. R. French Stone, of Indianapolis, last spring, and he replies to me in the following letter:

"DEAR DOCTOR: My experience with the appetizing and tonic effects of this agent is limited to two cases, but in these I have been highly pleased with its effect. The first case was one of obstinate anorexia, following an attack of typho-malarial fever. The patient at the beginning of his illness weighed over two hundred pounds. The febrile attack lasted about five weeks, but for several weeks subsequently there was complete loss of appetite, a foul or heavily-coated tongue (the worst, in fact, that I have ever seen in twenty years' practice), indigestion and great debility. This condition resulted in a loss of fully one-third of the patient's bodily weight. During all this time alternative digestants, mineral acids and our best vegetable bitters, tincture of chloride of iron, with tonic doses of quinine, Rhine wine and malt liquors were tried in succession, without the slightest avail. The patient was then advised to take a teaspoonful of the tincture of Fraxinus Americanus three times daily, before meal time, in connection with three grains of pil. hydrarg. on each alternate night, at bed-time, as long as the tongue remained coated. Improvement was marked from the first day that this plan of treatment was inaugurated, and the condition of the patient, much to my surprise and gratification, was changed from an apparently hopeless state to one of speedy convalescence. His appetite and digestion rapidly improved, and with it increased weight and strength. In a short time I was enabled to discharge the patient without further treatment. This patient was soon able to resume his occupation, that of express agent. The other case was that of a lad twelve years of age, hereditarily predisposed to pulmonary phthisis, who was in that dangerous pre-tubercular stage, attended by loss of appetite and indigestion. He derived no benefit from tonics until we tried the tincture of Fraxinus Americanus. Improvement was likewise marked in this case, and the patient's appetite, digestion and nutrition were soon restored to their normal condition. His strength and several pounds in weight have been regained, and he now appears to enjoy a fair degree of health, with, we hope, an arrest of tuberculosis. We do not believe that the apparent result in these two cases (though the only ones in which the remedy was tried) should be considered a mere coincidence. We hope, in suitable cases, to give the agent a further trial, and would advise the profession generally to do likewise.

"R. FRENCH STONE."

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DISINFECTANTS.

BY JAS. F. HIBBERD, M. D., LL. D., RICHMOND, IND.

In discussing disinfection with a view of applying it to the prevention of the spread of communicable diseases the first consideration should be to impress ourselves fully and firmly with the conviction that partial disinfection is no disinfection at all. If there be an agent that reproduces any disease, and we destroy only a part of such agent, it is quite clear that what is not destroyed must be sufficient to maintain the continuance of the malady. The situation may be likened to an attempted suppression of a prairie fire wherein a thousand acres of blazing grass may have been extinguished, but if a square inch be left in flame the conflagration will proceed, and only end with the consumption of all the inflammable material. So in the transmission of a communicable disease, no matter whether the contagion be an organic germ or an inorganic poison, if there be a 1,000 active parts and we destroy 999 of them, the thousandth part still remaining is abundant seed for all possible mischief. It is therefore a point of first magnitude that we acquaint ourselves with the best means known to destroy contagion in whatever shape it may appear, to the extent of the annihilation of every vestige of the active principle.

The importance of disinfectants can hardly be overstated. There is a widespread belief that there are preparations of chemicals or drugs on which we can rely to arrest the spread of contagious diseases, and there is no lack of mercenary men in the world who will practice on the credulity of the public, imposing upon them preparations with high-sounding names, for which they claim marvelous disinfecting virtues, but which, in fact, have little or no

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virtue in that direction, and are made to sell either in fraud or in ignorance of their real qualities.

It were better, far better, that the public should rely on natural disinfection, tedious and uncertain as it is, than that they abandon natural purification under promise that artificial disinfection shall do the work of purification promptly and perfectly, and then realize through experience and suffering that they have been deceived by false lights and led into avoidable danger by promises born of recklessness and avarice.

It is not intended by these declarations to assert that all so-called disinfectants in the market are unreliable, but that many of the proprietary preparations are worthless, and that for many years certain substances have had a reputation as destroyers of contagion, sanctioned by standard authorities, that was of questionable correctness. Within the last few years a number of competent investigators have been giving scientific examination to the question of disinfection. These investigators are of all civilized countries, and the result of their labor has been to revolutionize our ideas concerning the available means to combat contagion.

In this country Dr. George M. Sternberg, of the United States army, has been the most successful cultivator of this branch of sanitary science, and in truth his conclusions may be accepted as covering the freshest and fullest knowledge of the subject arrived at by all accredited investigators in whatever country resident. In the *American Journal of Medical Sciences,* for April, 1883, Dr. Sternberg published a paper entitled, "Experiments to Determine the Germicide Value of Certain Therapeutic Agents," which was a clear exposition of many valuable truths in disinfection, and the correction of some dangerous errors. This experimental exhibit did not go far enough to be a sufficient guide for the general medical practitioner, nor was its contents of a character to satisfy a grave want in the prospect of an early visitation of cholera. Under these circumstances I offered in the American Public Health Association, at St. Louis, in October, 1884, the following preamble and resolution:

WHEREAS, It is important equally for practitioners of medicine, for boards of health and for the general public, that the highest attainments of science in this department of sanitation should be formulated for easy reference by all who need it for practical appli-

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cation, and especially is this desirable in view of the probable visitation of cholera in the near future; therefore be it

Resolved, By the American Public Health Association, that a committee be appointed to examine the subject of disinfectants, antiseptics, and germicides in their relations to preventive medicine and sanitation, and that said committee formulate a table of these agents for the information of those interested, the agents to be classified, so far as may be deemed advisable, according to their specific virtues, facility of application and economy of use.

This was adopted, and under the resolution a committee of seven was appointed, Dr. Sternberg, pursuant to my suggestion, being named chairman, and the other members were Drs. Raymond, of Brooklyn; Smart, of the army; Vaughan, of Michigan; Leeds, of New Jersey; Watkins, of New Orleans, and Rohe, of Baltimore. These gentlemen published several preliminary articles in the *Medical News* of Philadelphia, detailing the progress of the work committed to their hands, but their full and final report was made to the annual meeting of the American Public Health Association, held in Washington, D. C., in December, 1885. This report was a printed phamphlet of 137 pages, and contains the committee's ideas of the nature and extent of the inquiry they were asked to make, how much of it they could profitably undertake, their methods of investigation, the part of the work each member did, and the conclusions to which their joint labors brought them.

It is to the contents of this final report that I now desire to call attention, and I so desire because I deem its teachings and conclusions of exceeding importance, and am of the opinion that the profession has not regarded the subject with the earnestness that its practical value demands. It was my impression in Washington that the Association would at an early day bring this report into general circulation, so that all interested parties could have access to it, but such circulation has not yet been given it, and while most of its salient valuable points have been brought before the profession in the various publications of the committee made as the work progressed, there has been evidence lately presented that these points have not been studied—even by all health officers of this State—to such an extent as to constitute a guide for them in dealing with communicable diseases.

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It is therefore for the purpose of awakening attention to the matter that I bring the subject up at this time and in this form, believing that it is a good method of securing adequate attention to true and efficient disinfection to call it up for renewed consideration and discussion on proper occasions, until we all become familiar with the extent and value of the information wrought out by the committee.

A broad distinction is made in this report among disinfectants, antiseptics and deodorants. This is as it should be, and it is a distinction that ought to be borne in mind at all times. A disinfectant is an agent that is "capable of destroying the infecting power of an infectious material," and as the germ theory of infectious diseases is so generally accepted, a germicide and disinfectant become, so far as the experiments of this committee are concerned, synonymous expressions, all the provings having been of a biological character.

An antiseptic is an agent that will arrest putrefaction, but it is not, therefore, necessarily a disinfectant. It may effectually stop putrescence without touching the vitality of a disease germ.

A deodorant is an agent that destroys offensive odor, but is not necessarily either an antiseptic or disinfectant.

Bad odors may cease and sepsis may determine while disease germs may survive and contagion continue its perfect work.

In the past it has been a prevailing idea that an agent that would destroy a bad odor or arrest purtrefaction would be equally destructive of disease germs or other contagion, so that many preparations, really only deodorants or antiseptics, which have heretofore been used to prevent the spread of disease have been so used under the honest conviction that they were also equally efficient as disinfectants, but we can not longer be excused for a mistake of this kind, for we are now plainly taught that a deodorant has its important uses, and an antiseptic is valuable for many purposes, but neither the one nor the other must be confounded with or trusted for a disinfectant which plays an entirely distinct, and much higher, role in preventive medicine.

This committee finding it impossible in the time alloted to examine deodorants and antiseptics, as well as disinfectants and germicides, confined their attention to the latter and only reported on

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the former, when they constituted germane incidents of their investigations of the latter.

All the conclusions reached and announced in this report have been established by experiment, that is, while the committee have fully appreciated the labors of others, at home and abroad, they have in all instances experimentally verified the conclusions of others before adopting them, and in the major part of their labors their investigations have been of an original character, pursued with the most rigid conformity to scientific exactness.

The tests have been biological; i. e., bacterial organisms known to be associated with certain diseases, as anthrax, vaccinia and septicemia, and others found in putrifying beef-tea, have been subjected to the influence of the disinfectant, and then their vitality tested in a prepared culture fluid. Resting upon the ascertained fact that the Bacillus anthracis and the Bacillus subtilis are among the most tenacious of life in the great bacterian family, the committee assumed, quite safely, that when a disinfectant destroyed the life of these organisms it would destroy all germs of this class, but clearly recognizing and plainly declaring that the spores of such germs as bear them, are more difficult to kill than the germs themselves, and always indicating what measures are sufficient to destroy the germs alone, and what in addition is demanded for the destruction of the spores.

These investigations were carried on for the most part in the laboratory of the Johns Hopkins University in Baltimore, and the first service was to ascertain the value of twenty-nine commercial disinfectants; i. e., preparations placed on the market by their manufacturers with claims for great efficiency. Thirteen of these were found practically good for nothing, and ten of the others too poor to rely on except in impracticable quantities. This leaves six that had disinfectant virtues, but I do not copy the names from the table furnished, of either the good or the bad, because the only safe rule in regard to these proprietary disinfectants, is to discard them all, and this recommendation is made without hesitation because, as we shall see presently, the committee have prescribed disinfectants more trustworthy and of less cost than any proprietary preparation in the market, and have detailed rules for their application.

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Four samples of chloride of lime and five of Labarraque's solution of different makes were purchased in the Baltimore market and examined. All the samples of lime were good, but one of them was barely within the good limit. One sample of Labarraque's solution was excellent, two were fair and two worthless. Quite likely all the samples were originally good, the present quality depending upon the age of the sample, as Labarraque's solution is an unstable compound. All this indicates that while we may generally rely on the quality of the chloride of lime in the market, it will not be safe to trust to Labarraque's solution without ascertaining the percentage of chlorine in it at the time of use.

Then follow the experiments to determine the disinfectant value of permanganate of potash, peroxide of hydrogen, chlorine, bromine, iodine, carbolic acid, mineral acids, metalic sulphates, chloride of zinc, corrosive sublimate, dioxide of sulphur, sulphites, dry heat, moist heat, and putrefactive products. The results are clearly set forth, and where the article is of especial practical value, the method and rules of its preparation and application are minutely detailed.

The method of sterilizing or disinfecting feces is given, and then the practical conclusions to which all this labor has brought the committee are presented in a brief and explicit manner, and the pamphlet concludes with an amended modification of what has been widely published in medical and sanitary journals under the title "Preliminary Report," prepared at the solicitation of the Sanitary Council of the Mississippi Valley, at its annual meeting in New Orleans, in March, 1885.

This preliminary report as now presented contains, probably, the most complete instructions for every day efficient disinfection in the English, or any other, language, and formulates the practical procedures best adapted for arresting the propagation of contagious diseases. Its substance should be a part of the knowledge of every medical practitioner, and every practitioner should be a propagandist of its principles to the public and among his clients.

In this amended report three disinfectant solutions are presented as a basic means for ordinary practical disinfection, commended both for their efficiency and their economy. These are denominated "Standard Solutions," and are as follows:

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Standard Solution No. 1.

"Dissolve chloride of lime of the best quality* in pure water, in the proportion of four ounces to the gallon.

Use one quart of this solution for the disinfection of each discharge in cholera, typhoid fever, etc.† Mix well, and leave in vessel for at least one hour before throwing into privy vault or water closet. The same directions apply for the disinfection of vomited matters. Infected sputum should be discharged directly into a cup half full of the solution.

Standard Solution No. 2.

Dissolve corrosive sublimate and permanganate of potash in pure water, in the proportion of two drachms of each salt to the gallon.

This is to be used for the same purposes and in the same way as Standard Solution No. 1. It is equally effective, but it is necessary to leave it for a longer time in contact with the material to be disinfected—at least four hours. The only advantage which this solution has over the chloride of lime solution consists in the fact that it is odorless, while the odor of chlorine in the sick room is considered by some persons objectionable. The cost is a little more.‡ It must be remembered that this solution is highly poisonous. It is proper also to call attention to the fact that it will injure lead pipes if passed through them in considerable quantities.

It will be best to empty the vessel containing excreta and disinfectant into an earthen jar or wooden vessel and to leave it for twenty-four hours, at the end of which time it may be thrown into a privy vault or into a hole in the ground excavated for this special purpose.

* Good chloride of lime should contain at least 25 per cent. of available chlorine. It may be purchased by the quantity at 3½ cents per pound. The cost of the standard solution recommended is therefore less than one cent a gallon. A clear solution may be obtained by filtration or by decantation, but the insoluble sediment does no harm, and this is an unnecessary refinement.

† For a very copious discharge use a larger quantity. For the disinfection of solid or semi-solid feces use a solution of twice this strength—8 oz. to a gallon of water—in the proportion of one quart for every 4 oz. of material to be disinfected.

‡ Corrosive sublimate costs about 70 cents a pound, and permanganate of potash 65 cents a pound by the single pound. This makes the cost of Standard Solution No. 2 a little more than 2 cents a gallon.

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STANDARD SOLUTION NO. 3.

Dissolve four ounces of corrosive sublimate and one pound of sulphate of copper in a gallon of water.

Two fluid ounces of this standard solution to the gallon of water will make a suitable solution for the disinfection of clothing. The articles to be disinfected must be thoroughly soaked with the disinfecting solution and left in it for at least two hours, after which they may be wrung out and sent to the wash.

N. B. Solutions of corrosive sublimate should not be placed in metal receptacles, for the salt is decomposed and the mercury precipitated by contact with copper, lead or tin. A wooden tub or earthen crock is a suitable receptacle for such solutions.

In this connection I deem it important that the general practitioner should bear in mind certain facts distinctly set forth in the quotation just submitted. It will not have escaped observation that these standard solutions contain only four drugs, to-wit: Chloride of lime, corrosive sublimate, permanganate of potash and sulphate of copper. The omission of carbolic acid, chloride of zinc and sulphate of iron from all mixtures recommended for sick room disinfection strikes one as singular in view of the position these chemicals have held heretofore in the management of the excretions of persons ill of dangerous contagious diseases. The omission was not from thoughtlessness, but from the demonstrated fact that sulphate of iron is not a disinfectant at all, and the other two are inferior to the standard solutions and not as suitable for sick room application. This statement should be held in remembrance.

The "conclusions" of the committee are a valuable summing up of present knowledge of practical disinfection as illustrated by their labors. For the disinfection of infectious spores, *i. e.*, their destruction, five agents are designated, and for other infectious organisms ten agents are designated, all the agents being available and reliable. Then follow special directions for the disinfection of excreta, clothing and bedding, furniture and household articles, nurses, dead bodies, sick rooms and hospital wards, merchandise and mails, rags, and finally ships.

Except for ships, which do not so much concern our everyday duties, these agents and rules for their application are hereto

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appended for easy reference and ready information, but every physician who is impressed with the necessity and importance of preventing the spread of communicable diseases should make a study of the entire report of the committee in order to appreciate the scientific foundation on which the fresh doctrines of disinfection rest, and learn how the errors of the older views have been demonstrated.

The following is quoted from the report of the committee, beginning with page 124:

The experimental evidence recorded in this report seems to justify the following conclusions:

The most useful agents for the destruction of spore-containing infectious material are:

1. Fire. Complete destruction by burning.
2. Steam under pressure. 110° C. (230° Fahr.) for ten minutes.
3. Boiling in water for one hour.*
4. Chloride of lime.† A 4 per cent. solution.
5. Mercuric chloride. A solution of 1 : 500.

For the destruction of infectious material which owes its infecting power to the presence of micro-organisms not containing spores, the committee recommends:

1. Fire. Complete destruction by burning.
2. Boiling in water half an hour.
3. Dry heat. 110° C. (230° Fahr.) for two hours.
4. Chloride of lime.† 1 to 4 per cent. solution.
5. Solution of chlorinated soda.‡ 5 to 20 per cent. solution.
6. Mercuric chloride. A solution of 1 : 1000 to 1 : 4000.
7. Sulphur dioxide. Exposure for twelve hours to an atmosphere containing at least 4 volumes per cent. of this gas, preferably in presence of moisture.§
8. Carbolic acid. 2 to 5 per cent. solution.
9. Sulphate of copper. 2 to 5 per cent. solution.
10. Chloride of zinc. 4 to 10 per cent. solution.

* This temperature does not destroy the spores of *B. subtilis* in the time mentioned, but is effective for the destruction of the spores of the anthrax bacillus and of all known pathogenic organisms.

† Should contain at least 25 per cent. of available chlorine.

‡ Should contain at least 3 per cent. of available chlorine.

§ This will require the combustion of between 3 and 4 lbs. of sulphur for every 1,000 cubic feet of air space.

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The committee would make the following recommendations with reference to the practical application of these agents for disinfecting purposes:

FOR EXCRETA.

(*a.*) In the sick room.

For spore-containing material;

1. Chloride of lime in solution, 4%.
2. Mercuric chloride in solution, 1 : 500.*

In the absence of spores;

3. Carbolic acid in solution, 5%.
4. Sulphate of copper in solution, 5%.
5. Chloride of zinc in solution, 10%.

(*b.*) In privy vaults:

Mercuric chloride in solution, 1 : 500.†

(*c.*) For the disinfection and deodorization of the surface of masses of organic material in privy vaults, etc.:

Chloride of lime in powder.‡

FOR CLOTHING, BEDDING, ETC.

(*a.*) Soiled under-clothing, bed linen, etc.:

1. Destruction by fire, if of little value.
2. Boiling for at least half an hour.
3. Immersion in a solution of mercuric chloride of the strength of 1 : 2000 for four hours.§
4. Immersion in a two per cent. solution of carbolic acid for four hours.

(*b.*) Outer garments of wool or silk, and similar articles, which would be injured by immersion in boiling water or in a disinfecting solution:

* The addition of an equal quantity of potassium permanganate as a deodorant, and to give color to the solution, is to be recommended (*Standard Solution No. 2*).

† A concentrated solution containing four ounces of mercuric chloride and one pound of cupric sulphate to the gallon of water is recommended as a *standard solution.* Eight ounces of this solution to the gallon of water will give a dilute solution for the disinfection of excreta, containing about 1 : 500 of mercuric chloride and 1 : 125 of cupric sulphate.

‡ For this purpose the chloride of lime may be diluted with plaster of Paris, or with clean, well-dried sand, in the proportion of one part to nine.

§ The blue solution containing sulphate of copper, diluted by adding two ounces of the concentrated solution to a gallon of water, may be used for this purpose.

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(1.) Exposure to dry heat at a temperature of 110° C. (230° Fahr.) for two hours.

(2.) Fumigation with sulphurous acid gas for at least twelve hours, the clothing being freely exposed, and the gas present in the disinfection chamber in the proportion of four volumes per cent.

(*c.*) Mattresses and blankets soiled by the discharges of the sick:

1. Destruction by fire.

2. Exposure to super-heated steam—twenty-five pounds pressure—for one hour. (Mattresses to have the cover removed or freely opened.)

3. Immersion in boiling water for one hour.

4. Immersion in the blue solution (mercuric chloride and sulphate of copper) two fluid ounces to the gallon of water.

FURNITURE AND ARTICLES OF WOOD, LEATHER AND PORCELAIN.*

Washing, several times repeated, with:

1. Solution of mercuric chloride 1 : 1000. (The blue solution, four ounces to the gallon of water, may be used.)

2. Solution of chloride of lime, 1%.

3. Solution of carbolic acid, 2%.

FOR THE PERSON.

The hands and general surface of the body of attendants, of the sick, and of the convalescents at the time of their discharge from hospital:

1. Solution of chlorinated soda diluted with nine parts of water (1 : 10.)

2. Carbolic acid, 2% solution.

3. Mercuric chloride, 1 : 1000; recommended only for the hands, or for washing away infectious material from a limited area, not as a bath for the entire surface of the body.

FOR THE DEAD.

Envelop the body in a sheet thoroughly saturated with:

1. Chloride of lime in solution, 4%.

2. Mercuric chloride in solution, 1 : 500.

3. Carbolic acid in solution, 5%.

* For articles of metal use Solution No. 3.

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For the Sick Room and Hospital Wards.

(*a.*) While occupied, wash all surfaces with:

1. Mercuric chloride in solution, 1 : 1000 (the blue solution containing sulphate of copper may be used.)
2. Chloride of lime in solution, 1%.
3. Carbolic acid in solution, 2%.

(*b.*) When vacated:

Fumigate with sulphur dioxide for twelve hours, burning three pounds of sulphur for every 1000 cubic feet of air space in the room; then wash all surfaces with one of the above-mentioned disinfecting solutions, and afterward with soap and hot water; finally throw open doors and windows and ventilate freely.

For Merchandise and the Mails.*

The disinfection of merchandise and of the mails will only be required under exceptional circumstances; free æration will usually be sufficient. If disinfection seems necessary, fumigation with sulphur dioxide, as recommended for woolen clothing, etc., will be the only practicable method of accomplishing it.

Rags.

(*a.*) Rags which have been used for wiping away infectious discharges should at once be burned.

(*b.*) Rags collected for the paper-makers during the prevalence of an epidemic should be disinfected before they are compressed in bales by:—

1. Exposure to super-heated steam (twenty-five pounds pressure) for ten minutes.
2. Immersion in boiling water for half an hour.

(*c.*) Rags in bales can only be disinfected by injecting superheated steam (fifty pounds pressure) into the interior of the bale. The apparatus used must insure the penetration of the steam to every portion of the bale.

* In order to secure penetration of the envelope by the sulphur dioxide, all mail matter should be perforated by a cutting stamp before fumigating.

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SYNOPSIS OF PAPER ON LAPAROTOMY.

BY THOMAS B. HARVEY, M. D., INDIANAPOLIS.

The term signifies an incision in the abdomen between the pelvis and ensiform cartilage.

The various conditions in which this operation is justified have multiplied rapidly within a very few years, or at least their recognition. There are perhaps those present who heard the remark of one (not now living) of the most celebrated teachers of medicine about 1850, that "there was no condition that would justify the surgeon in ripping open a woman's belly with the knife."

In the light of our present knowledge and experience there are a good many conditions which make it imperative, and several in which it is proper to make what may be called an abdominal section, or exploratory incision for diagnostic purposes.

1. For the removal of ovarian tumors, which caused the above remark, there is no longer any question as to its propriety.

2. For the removal of fibroid and fibro-cystic tumors of the uterus there may well be some question, owing to the great mortality attending the latter, coupled with the fact that many of these tumors are susceptible of removal by other treatment, as well as that many of them do no harm, develop very slowly, and may be expected to undergo atrophy after the meno-pause.

3. For the removal of diseased ovaries when clearly diagnosticated and rebellous to all other treatment.

4. The removal of healthy ovaries according to Batty, to precipitate the meno-pause and cause atrophy of fibroid tumors.

5. The removal of the fallopian tubes when diseased, as recommended by Lawson Tate.

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6. For diagnostic purposes in many conditions which can not by other means be understood.

7. The treatment of abscesses.

8. The treatment of wounds.

9. The treatment of intussusception.

10. Cæsarian section.

The practice of making a simple exploratory incision for diagnostic purposes is one which, although accepted as legitimate, requires great caution as it is open to the objection that it may be abused by incompetent men not sufficiently drilled in other modes of diagnosis. Ordinarily the differential diagnosis between ascites and ovarian mono-cystic tumors is not difficult, yet one condition obtains rendering the usual signs by which we may be governed of no effect, and rendering an incision necessary to complete the diagnosis. I refer to cases where the intestines by reason of previous peritonitis are bound to the posterior wall of the abdomen, a condition in which they can not float to the surface and thus aid us in percussion. It certainly is not justified in enlarged liver and spleen, these being generally easily diagnosticated. It becomes necessary in some doubtful cases where the kidneys have proven to be the cause of disease.

The success of laparotomy at the present time commends it to the medical profession, and the groundless fear (once deterring us) that the peritonial cavity could not be invaded without great danger has passed away.

Various reasons may be assigned for the comparative immunity from fatal results:

1. Greater care and knowledge in diagnosis.

2. Greater skill and dexterity of operators.

3. Absolute cleanliness in everything connected with the operation.

4. Limiting the extent of the incision, the smaller the better where the tumor is mostly fluid and no adhesions exist. The large being preferred where the latter or other conditions obtain.

5. The internal treatment of the pedicle.

Of the various pathological conditions which exist, and which may be relieved only by laparotomy, I wish to speak of but one, as I am aware that time is limited.

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That is in regard to diseases of the ovaries and fallopian tubes, and in this I only wish to call the attention of the medical profession, and the public through the profession, to the prophylactic treatment. Preventive medicine in this is perhaps more loudly called for than may be thought of.

That such conditions calling for extreme measures exist in frightful frequency there can be no question, and it may well be questioned whether the remedy is always to be preferred to death, or continued disease. I refer in the etiology of ovarian and fallopian diseases to the very common and objectional manner of treating females who are afflicted with disordered menstruation. This is a practical question, and one which every physician is called upon to prescribe for. What is the usual treatment in suppression of the menses? Too often this has been purposely produced for various reasons; often it is unavoidable. Hot, stimulating drinks, alcoholic or otherwise, accompanied with aloetic and other alleged emenagogues. The effects of these may in some cases be beneficial, that is if they succeed in reestablishing the flow, but very injurious when failure results, as, if they have any influence whatever in such cases it must be by increasing the flow of blood to the pelvic viscera, thus increasing the congestion and laying the foundation for future chronic disease which calls for the knife. What then is the proper treatment in such cases? Rest in bed, warm foot and hip baths, saline laxatives and sedatives, and a withdrawal of treatment as soon as it is ascertained that the menstrual molimen has passed by, recognizing the physiological fact that menstruation only occurs from definite causes, and a flow of blood at other times is only hemorrhage. Time will not be taken here to speak of other causes of fallopian disease which are recognized such as the extension of catarrhal diseases from the vagina and uterus, specific or otherwise.

DISCUSSION.

Dr. Eastman—Mr. President, I rise to move that the paper be referred to the Committee on Publication. It is a very important subject. There is one thing he did not mention, and that was the removal of the ovaries for the purpose of arresting or preventing cancer. Another important question is, who shall perform these operations. I believe they belong to the class of such subjects as

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cataract in the eye, and should only be performed by men skilled in such work.

Dr. Galbraith—Mr. President, I think that gonorrhœa is an important cause in bringing about this fallopian disease which furnishes a condition making this operation necessary. I am satisfied that the importance of gonorrhœa as a positive agent is not fully realized by the general practitioner.

Dr. Lomax—Mr. President, in regard to the idea that these operations should be performed only by skilled persons—those who have studied the subject particularly, I will agree with that view. But I have known four cases, if not five, in which skilled persons would not touch the patient without a fee of from $300 to $500. The patients were unable to pay anything in two cases, and could not procure this skill. Under this pressure a physician who went into the thing very reluctantly performed the operation in two or three cases, and succeeded well. In two cases the patients could not get an expert, and the family physician was afraid and declined to operate, and the patients died.

Dr. J. C. Sexton—Mr. President, while I agree with Dr. Eastman, that only those who are skilled should operate, but there are a good many cases where laparotomy is almost imperatively demanded, cases of acute obstruction, where time can not be spared to call in an expert, or to ship the patient to a distance. In those cases I think an operation at the hands of any one who knows what is right and what is wrong inside of the abdominal cavity is justifiable.

Dr. J. L. Stewart—Mr. President, in regard to the latter clause of the paper, suppressed menstruation, I am of the opinion that there has been more harm done in attempting to treat it than in not. I commend the Doctor's idea of the management of the subject.

Dr. Harvey—Mr. Chairman, there is a great deal in this subject, and of course a great many points which I did not develop in the paper. The question suggested by Dr. Eastman of removing the ovaries for the purpose of preventing cancer is one which, although it may be correct in theory, is new, and one would hesitate a long time before removing the ovaries, for fear cancer might develop.

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How proper it might be after cancer had developed in the uterus is another question.

In regard to gonorrhœa as a cause of disease of the follopian tubes, I forgot to mention that. It is a very important subject, and one which we have to touch very gently. It would not do to say that every woman who has a disease of the fallopian tubes had had gonorrhœa. We meet with cases in which it would not do to suggest such a thing. I have found it to result from sudden suppression of menstruation. One lady had been compelled to make forced marches during a severe snow storm while menstruating, and suppression occurred far from medical relief. Another young lady was engaged in preparing for a church festival during her menstrual period, and as a result had a disease that would have inevitably destroyed her life if the ovaries had not been removed. I think we are at fault for not properly educating the mothers in regard to the proper care of their daughters.

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SOME OBSERVATIONS IN THE TREATMENT OF DIABETES MELLITUS,

WITH A FEW CASES.

BY WILSON HOBBS, M D., KNIGHTSTOWN, IND.

I can not now recall a single case of recovery in my early experience in the treatment of diabetes mellitus. Fortunately not many cases fell under my notice; hence, the world suffered no great loss by my failure to cure.

To illustrate my early and later experience, I will relate a few cases.

Case 1. Mr. C., aged forty-seven, whose ordinary weight was about 115 pounds, a cabinet-maker by trade, whose general health had been good for many years, called on me for advice on account of his having to go to the door so frequently at night. I found him suffering with all the ordinary conditions of diabetes mellitus fully set upon him. The urine was very heavily loaded with sugar, the appetite ravenous, the discharge of urine very great in quantity, and emaciation considerable and on the increase. There was no evidence of hereditary transmission of the disease, nor had he been troubled with rheumatism.

I put him at once on an anti-sugar diet, and such remedies as the books of that day advised, the chief among which were opium and arsenic. A few weeks brought no amelioration of the symptoms, and I sent him to Wakesha, Wisconsin, whose mineral springs were then just coming into notoriety. He remained there but a few weeks, as relief did not come to him as hoped for. He returned to his home after a short stay, and soon afterward, from a slight exposure, took double pneumonia and died. His system made no

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effort at reaction. This patient fell under my notice in October, and died in June, following.

Case 2. I examined Mrs A. in November, 1868. She was fifty-five years old, rather stout, and the mother of two children. Her health had been good for some years. There was no history of special constitutional vice, but two of her brothers and several of her cousins and nephews have since died of diabetes mellitus. All the characteristic symptoms of diabetes mellitus were well marked when she was first examined by me. I remember that I evaporated a pint of her urine, and procured from it a lump of "taffy" as large as a quail's egg, and consistent enough to "pull" with my fingers. My treatment consisted of a strict nitrogenous diet, opium, arsenic and ergot.

There was at no time a disappearance of the sugar from the urine, or any considerable relief from the dangerous symptoms. She died August 11, 1870—a little less than two years after coming under my notice—of diabetic coma.

Case 3. In November, 1883, Mr. S. called to see me on account of his excessive thirst, appetite and flow of urine. Besides this he had noticed himself losing flesh and growing less able to work. He was an active young farmer, with a wife and two children, and fully determined that there should be nothing the matter with him. I soon found his a very pronounced case of diabetes mellitus, with no testimony left out.

I put him on a very strict anti-sugar diet—buttermilk, skimmed milk, gluten bread, all kinds of flesh and fish, with oysters, eggs and nuts, except chestnuts, were allowed. Arsenic, opium, ergot, tannic acid, etc., were plied upon him with industry and force, and after a few weeks, there being no improvement, he procured a barrel of Bethesda water from Wakesha, Wisconsin, but when the latter came to hand, his decline was so rapid, that after a few days of its use, I dispatched him to the springs, that he might have the benefit of the fresh water in all the ways that experience has found it valuable in this disease. He died of diabetic coma on the second day after his arrival at Wakesha—a little less than three months after his first report to me. Two brothers and one sister

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of his father, as well as some more distant relatives in the same line, have died of the same disease.

Case 4. Miss C., now Mrs. H., has been frequently under my care, and constantly under my notice for ten or twelve years. When I first knew her she was a delicate miss of twelve or fourteen. She had symptoms of chorea constantly, and frequent attacks of rheumatism—sometimes acute, sometimes sub-acute. During or after one of these attacks, the chronic symptoms were much intensified, but they were never entirely absent. Five years ago the worst attack of rheumatism of all came, and with it a corresponding state of the nervous trouble. In her convalescence from this there appeared an unsatisfiable thirst and appetite, with the discharge of a large quantity of urine, heavily loaded with sugar. She entered at once on the anti-sugar diet hereinbefore indicated, with iron, salicylate of soda and ergot. She began to mend at once, and the sugar soon disappeared with all its train of symptoms.

A few months afterwards there come another attack of acute rheumatism, and the diabetic symptoms appeared as before in their former pronounced conditions. The treatment before given was repeated, and it was followed by like good results.

At this time winter was coming on and I sent her south, where she remained until April or May following. She returned much improved in her general condition and has had no rheumatism or diabetes since—now three years. The chronic symptoms are still upon her but in a much lighter degree. She has since married, her general health is good, and she bids fair to be a mother soon.

Case 5. The mother of the last patient reported is about fifty years old, is a widow, has undergone much hardship by out door exposure in the management of her farm and business. Her life has not been much worried by sickness or confinement, but she has long been a sufferer from chronic articular rheumatism. From this cause her hands and feet are much disabled, and all the articulations in these members are much enlarged.

Two years ago she called my attention to some disturbances of her vision, which led me to inquire into the state of her urine. I found her suffering from a voracious appetite and unquenchable thirst, frequent calls to urinate and the discharge of eight quarts of

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urine a day of a light straw color and high specific gravity. Chemical analysis proved it to be heavily loaded with sugar. She could give me no statement by which I could determine the previous duration of the diabetic condition, but I was led to the conclusion that it had been upon her six or eight months.

I put her upon a strict anti-diabetic diet, and medicinally upon salicylate of soda, quinine and ergot. A few days after this she fell into an attack of acute rheumatism, which was mastered by salicylate of soda and quinine in the main. From these acute symptoms she began to convalesce in a few days, but there was no abatement of the thirst, the quantity of urine discharged, and the amount of sugar noticed. I at once ordered the Bethesda water, the use of which she has continued to this writing. The inordinate appetite, the thirst and the sugar in the urine soon disappeared, and neither has since returned. She has formed such a liking for the water that no other will satisfy her taste, and she would be inclined to continue it as a beverage even though she had not the excuse of using it as a medicine. It is now quite two years since my first notice of the diabetic symptoms in this case, and nearly eighteen months since there were any such to observe. The patient is enjoying good health for one of her age and habits.

Case 6. Mrs. S , a farmer's wife, sixty-five years of age, who has raised a large family of sons and daughters, and has suffered little from the common ills of life to present old age, and whose family history bears no trace of constitutional vice, but who lost a son not long since from diabetes mellitus, traced to his father's stock, became uneasy on account of her great thirst and appetite, and the large quantity of urine which she was discharging. When called in I found her with a voracious appetite and great thirst, and discharging about ten quarts of urine a day. The urine had a specific gravity of 1045. and chemical analysis showed it to be loaded with sugar.

She is tall and somewhat stout, but her general aspect gave evidence of the terrible drain upon her. She had the diabetic countenance well marked, all showing that the disease was well upon her, and admonishing me that this was one of the most unpromising cases of diabetes I had ever seen. She was put at once on the anti-sugar diet, ergot and arsenic, and a barrel of Bethesda water was ordered, of which she began the use in less than a week.

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About this time there appeared in the family as a visitor a lady about the size and much the general appearance of Mrs. S., who recently resided in Kansas. She is a very intimate friend of my patient, and has her confidence most fully. This lady represented to the patient that she herself had been a subject of diabetes mellitus, and in less than a year before was much more prostrated and in every way worse than Mrs. S. then was, but that she had found a medicine which was prescribed for her by a physician in regular practice, by the use of which her great thirst and appetite had been removed, and her great discharge of urine reduced to the normal quantity. The wasting of her flesh had also been checked, and her former strength and vigor were nearly restored.

These statements were brought to me at once, and they had secured such hold upon the patient and her friends that I could not disregard them in a case which gave so little promise by the ordinary management.

I interviewed this visitor at once, and found her using Lithiated Hydrangea, a preparation made by the Lambert Pharmacal Co., of St. Louis. She had taken no other drugs, and had given little attention to diet. She informed me that she was under the medical treatment of Dr. Gause, of Hasper, Kan., who had stated to her that he had found this preparation a sovereign remedy in diabetes mellitus. By the use of it he had been uniformly successful in the treatment of his cases, whereas with other means failure was the rule. At the time of my call this lady was still using the remedy occasionally. She had found the prominent symptoms promptly subdued by the use of the drug, but if she neglected the use of it a few weeks they returned upon her.

My inquiries fully satisfied me that she was suffering from diabetes mellitus, and Dr. Gause, in a recent letter to me, confirms the diagnosis by a statement of his chemical analysis of the urine.

This interview led me to substitute the Lithiated Hydrangea for the drugs I was giving Mrs. S, but I very carefully enforced the special diet ordered. The mineral water was continued, to the exclusion of all other water, to slake the thirst, and allowed *ad libitum.*

A very decided improvement in the condition of my patient was noticeable in a few weeks, and in less than two months the sugar had

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disappeared from the urine, the morbid thirst and appetite were gone, the skin was soft and pliant, the quantity of urine per diem was normal, the countenance had lost its anxious expression, and the strength and flesh were on the increase.

Thus the case is continued to this writing, except an occasional reappearance of the sugar when the special diet is relaxed. She now takes four desertspoonfuls of the Lithiated Hydrangea each day, and has discontinued the Bethesda water. She is so much improved as to have the care of her house and dairy, and goes out to church and to call on her friends.

I am very desirous of knowing just how much of the improvement in this case is due to each of the three means used—the medicine, the diet and the mineral water. Possibly this might be determined by exclusion, but I have not thought it best to experiment further than to drop the latter. With this the violent symptoms have not returned.

Since the presentation of this paper to the Henry County Medical Society in February, Dr. E S. Ferris, a very intelligent young physician of New Castle, Ind., who heard it read there, has very kindly reported to me a case which has since come under his care. His patient is a gentleman fifty-six years of age, who has ordinarily the appearance of good health. His family history is clouded by the fact that about twenty years ago a brother died of diabetes mellitus. The elder Dr. Ferris reports that a clear case of saccharated urine.

This patient has a decided rheumatic history. When quite young he had articular rheumatism, which clung to him two or three years and left him with some of his joints stiffened and permanently enlarged. Since then he has had occasional attacks of acute muscular rheumatism. Dr. Ferris states his condition in February, when he first examined him, thus: "He had frequent and excessive urinary discharges with a dull, tired sensation in the region of the kidneys, great thirst, with dry, parched condition of tongue and throat; skin dry and harsh; great soreness in muscles of the chest and arms; appetite sometimes voracious, sometimes preverse; bowels slightly constipated; countenance anxious and distressed; urine with an excess of acid and an enormous quantity of sugar, and having a specific gravity of 1032. The microscopic examination was nega-

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tive except as to numerous uric acid crystals and an occasional cystic epithelial cell."

Dr. Ferris further says that he put the patient at once on a strict anti-saccharine diet and ordered two teaspoonfuls of the Lithiated Hydrangea with ergot four times a day, and added the salicylate of soda to overcome the rheumatic tendency. May 4, he reports to me that notwithstanding it has been found impossible to enforce the prescribed diet, the patient seems greatly improved. His appetite is not so ravenous, the skin is moist, the muscular soreness almost gone, the pain over the kidneys less, and he is much improved in every way, but sugar is still present in the urine, though much less in quantity. The specific gravity being now 1024. These figures show a wide difference in the quantity of sugar discharged in twenty-four hours when considered in relation to the diminished quantity of urine.

I sought a correspondence with Dr. Gause, in April ult., in which I made particular inquiries as to his observations in the use of Lithiated Hydrangea in the treatment of diabetes mellitus. His reply is a very emphatic declaration of his confidence in the curative properties of the preparation in this disease, he not having failed to cure in a single case of his use of it. But he makes no report to me of the number of his cases or their clinical history. Nor does he report to me what he may know of its use by others. He relies upon it to the exclusion of all other means, not even advising the special diet.

The labels on the packages of Lithiated Hydrangea put up by the Lambert Pharmacal Company, represent each f 3. of the preparation to contain xxx grs. of hydrangea and iii grs. of chemically pure benzo-salicylate of lithia.

I hope not to be understood as recommending this preparation of hydrangea as a "cure all" for saccharine urine, or as so much as saying certainly that it has any value whatever as a cure in this disease, but I do believe that the evidence before me justifies a trial of its properties. Should it be found unable to remove the diseased conditions which arrest the chemico-vital processes of assimilation at the point of the conversion of sugar into the higher products of life, and only able to assist the forces for the time being over the difficulty, and hold the diseased manifestations in abeyance, it will even then

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be second to no means at our command for the help of diabetics. This is probably all this or any other drug can do in a large part of the cases. Its true value can only be settled by trial; to secure trial is the purpose of this paper.

DISCUSSION.

Dr. Hibberd—I do not want to discuss this paper, but it seems to me rather too important a paper to be allowed to subside quietly into the publication mill without a word. I am glad to hear the paper for two or three reasons. In the first place it is only three or four years since every case of diabetes mellitus that came under the care of a physician was pronounced to be absolutely incurable. I remember that seven of us doctors were called to hold a consultation over a certain gentleman who had a very bad case of diabetes mellitus. Six of us pronounced him incurable. There was one, however, who took a more favorable view, and who thought that a change of diet would produce good results. The inquiry was submitted to us to know whether it was proper for him to undertake a journey to his friends in Maine We all agreed that it was proper. The individual who had a more hopeful view of the patient stated that at the time he had a patient under his care for several years, who had sugar in the urine, but that he was going about his business, and I may add he still continues in the same way. I ought to have stated that the man who went to Maine got entirely well. He submitted himself to the general programme laid down, and he came home without the sugar in his urine, but with a bad color. About a year after he died of cancer of the stomach.

My faith is not in drugs at all. I know nothing about *lithiated hydrangea.* The fact that it is a proprietary medicine rather raises my bristles against it; still I am not so hide-bound to refuse to use it if I am convinced it has merit. My whole reliance is in diet. It was said by Dr. Flint in the discussion of this method at Washington that diet had been the absolute safeguard; that drugs amount to nothing.

Dr. Maxwell—Mr. President, I was very much pleased to hear the report of Dr. Hobbs. One of the cases I am somewhat familiar with myself. The lady has a son-in-law in this city, and he brought

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her to me twice. The first time I found a large quantity of sugar in the urine, but the second time found more I am especially interested in the question, as I have at present a case that has been running for about six months. I put a woman fifty-two years of age upon a diet which is not sugar-making, and also upon the extract of codeia. The sugar, after a three weeks' treatment, entirely disappeared from the urine. I have kept her on a strict diet, mostly of milk, for six months' time, until about two or three weeks ago, when I told her she could begin to eat something else. She enlarged her diet and slackened the use of the codeia. The result has been sugar has again appeared in the urine, whether due to the change in her diet or decrease in the codeia I am unable to say.

Dr. Boyd—Mr. President, within the last year I saw it stated, I believe, in the Indianapolis *Journal*, that General Schenck, of Ohio, had consulted a physician of Philadelphia, whose name I have forgotten, if it was given, for treatment for diabetes mellitus. The physician told him he could cure him provided he would follow his directions. He said he must confine his diet to tomatoes and milk one year; that he must eat nothing else. It was stated that he did this and was well. I don't know whether there was anything in that statement or not.

Dr. Hibberd—I will tell him, Mr. President, that there is not a word of truth in it. I have known General Schenck for forty years. His disease was not diabetes mellitus, but uræmia. He had been given up by his doctors, but he went out into the country and lived on skim milk for a time, and is now well and weighs two hundred pounds.

Dr. Boyd—I am glad to hear that he is well, and that he got well on milk. The mistake arose, I suppose, from the fact that the statement was made in a secular paper. I wish to say that the only case of diabetes mellitus that I ever cured was twenty years ago. It was a young man, about twenty-four years of age, who lived in a very malarious district, on the upper waters of Flat Rock. He had a very marked case. I supposed that the malarious influence was the cause of the diabetes, and put him under a treatment of quinine and opium. He got well, and is well yet. I heard that he was in the lockup here a short time ago for some misdemeanor, and I suppose he is well.

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Dr. Pearson—I should like to say just a few words for nitric acid. Some eight or ten years since a prominent lady of this city, who had lived a very fashionable life—and by that I mean a life of dissipation and late hours—came under my care. At the time she came under my care, she was suffering from sugar in the urine. I don't remember the specific gravity. She also suffered from severe headache. I put her under the use of nitric acid, with skim milk, and kept her under a skim milk diet for six weeks. Then I gave her a more general diet for two weeks, when I put her back on skim milk for four weeks. The nitric acid treatment was continued all this time. She recovered; is well to-day, fleshy and robust.

Dr. Haughton—Mr. President, I have treated cases of diabetes mellitus without the success that I desire, and the query arises in my mind as we suggest questions of treatment whether we are always to remain on the line of empiricism or whether we are to learn anything which shall guide us into intelligent practice. This idea of suggesting remedies because of this and that and the other, to my mind, is the blind leading the blind. The question in my mind is whether this disease is one which rises in the digestive organs, namely, the stomach and liver, or whether the trouble is in the kidneys. I have used hydrangea. I think I know something of its value. I think I know that it will control the production of sugar in the urine. How it does this I am not able to determine. These are questions that are pathological in part and physiological in part. The paper has not suggested to us so far as I know or remember anything as to the pathology of this trouble. If there is any body who can suggest the origin of the sugar and a remedy, then I think we have got at the foundation of that question.

Dr. Mumford—Mr. President, I wish to call attention to a statement which I saw several years ago, something like this: That diabetic cases usually consist of two classes; one class being people of cold blood, light muscular system, thin, fair skin, and generally of the blonde type, if you will allow the term, and the other, fleshy, dark skinned and phlegmatic. The thin people die, and the fleshy people get well. That has been my observation.

Dr. Waterman—Mr. President, before this discussion ceases I wish to say one word. Dr. Haughton's remarks strike me very favorably. They are, generally speaking, correct; that is, that we

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ought to know all about disease, but here is a disease that for years we have been unable to understand, and we are compelled as practical men to do something. I have never had any experience to any extent with either nitric acid or hydrangea or the other remedy mentioned by the reader of the paper. I have recently had occasion to consider diabetes in connection with a very interesting case. A man doing a vast amount of intellectual work passes three pints of urine daily. He is in excellent health, and he reports himself as strong mentally as he ever was in his life, and still for three or four months past he has been constantly passing sugar in the urine. He is impressed as an intellectual man with the idea that he is in the beginning of a probable incurable disease. He is a man of ambition and wants to get rid of it. I rose to mention the fact that Professor Flint, Jr., after all his studies on this subject (you remember a series of cases in which he had treated patients by dieting them), has at the same time relied upon bromide of arsenic, and he reported very great success. Recently in the New York *Medical Journal* there was another series of three or four cases reported by a prominent physician, which were treated with the same remedy.

Dr. Smythe—Mr. President, I wish to say that my observation teaches me that no medicine that has ever been tried, unless attended with proper regulations of diet, has a single particle of influence upon the diabetic process. I have tried seven cases with bromide of arsenic. I heard Dr. Flint read his paper, and read it carefully, after it was published. I have also read Dr. N. S. Davis's paper within the last few days. In my judgment all remedies are not only worthless, but positively dangerous. The proper treatment is to regulate the diet and eliminate all saccharine and starchy food, or anything that can be turned into sugar. When you put your patient exclusively on a nitrogenous diet you will eliminate the sugar in from six to ten days. It is a very difficult thing to do unless you have absolute control of the patient; but if you will see that the patient is put upon an exclusive nitrogenous diet the sugar will be eliminated unless the organs have already undergone degeneration. I look upon any preparation of arsenic as dangerous.

Dr. Hobbs—Mr. President, I wish to say a few words in relation to that paper. One point is the frequent association of rheumatism in almost every case that I have seen. Paying little attention

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and almost disregarding remedies and putting all dependence in diet I think will be found to be bad practice. In the cases I have reported from Dr. Goss, of Kansas, he gave no exclusive diet; he did not insist upon diet at all, but his whole treatment and all the valuable results depended upon the use of the hydrangea alone. I, perhaps, have reason to be almost as much satisfied with the valuable results of the Bethesda water as I have from the hydrangea. If I had a new case I should insist first on diet, which, perhaps, is the most important; second, I should use the water, and I should use the lithiated hydrangea.

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EMMENAGOGUES.

E. HADLEY, M. D., INDIANAPOLIS.

A strict definition of the term emmenagogue is a medicine that promotes the menstrual flow. A practical one is any means or measure that determines, increases or corrects the menstrual flow when absent, deficient or painful, whether at the natural time or not. Such a definition may be a labored one, but it is still scarcely broad enough to cover the practice. The remedies included in this class are sufficiently abundant, unless they were less capable of harm, and the indications for their use were generally more clear. From the earliest times to the present, medicines of this class have been freely resorted to, both domestically and professionally; very much on the principle, I believe, that pertains to the use of liniments—the more ignorance has prevailed the more emmenagogues have been used.

It remains no less a fact, however, that derangements of the menstrual function are the most common and annoying difficulties of female life, and also that there are means of relief in most cases, whether such means bear the names of emmenagogues or not.

I believe there has been no class of medicines freely used that has been prescribed more empirically and with less philosophy than the one under consideration. Where is the physician who is not constantly applied to by females suffering from difficulties dependent upon everything from chlorosis to the meno-pause, from a cold to pregnancy? Who is he also who does not prescribe for such disorders, often with little comprehension as to whether the trouble originates from a functional or an organic cause; or with small knowledge as to whether the circumstance is trivial or in consequence of serious conditions of the organs.

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This is not an attempt at arraignment. We have done the best we could with the limited knowledge possessed by the medical world of diseases of the organs involved in disturbances of the menstrual function. Now, however, a new era has dawned upon this department. The marvelous development of understanding in the past few years of diseases of the female organs has naturally led to a readjustment in the practice of correction of these difficulties.

Let us first consider menstruation and the organs concerned in it. Previous to the establishment of this function the uterus is small, anteflexed, or even anteverted, soft and without tone. The Fallopian tubes are short, straight and small, and have had as yet no periodical functional movement. The ovaries are likewise small and soft, but have even before menstruation been producing ova. Throughout all the generative organs there is a relatively small vascular development. As the girl approaches puberty, there is a determination of blood to the pelvic organs. The vascularity is greatly increased, as well as the nervous sensibility. The uterus that was small, flabby and anteflexed, has now become erect and firm. The tubes that were straight, small and pale, have become tortuous and turgid. The ovaries that have been wastefully casting off their germs are now more fully developed for producing mature ova. The abundant uterine and tubal capillaries become intensely congested. The Fallopian tubes, so long inactive, now for the first time assume movement; the fimbreated extremity of one or both embrace their respective ovaries, one of them at least including in its embrace a now mature ovum which, on the rupture of its sack, it conducts as a first effort to the uterine cavity. About simultaneously the congested capillaries rupture. There is a flow of blood from the womb and tubes, and womanhood is established.

What determines this monthly repetition has to be referred, along with the causes that determine labor, to the inscrutable. The necessity of the flow of blood with the ovulation is not satisfactorily accounted for. While the tubes clasp the ovaries once a month only, it is estimated by high authority that while one ovum finds its way into the uterine cavity, ten are cast off into the abdominal cavity.

This constitutes a natural menstruation, and is preceded and accompanied by lassitude, aching and dragging sensations, and fullness in the pelvic organs. These symptoms vary considerably in in-

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tensity and character, being influenced by age, temperament, climate, locality, habits and circumstances. Lastly, which is designed to be the essential point of this essay, is the unnatural condition of the various influences and organs involved in the menstrual phenomenon.

The preceding enumeration of processes and symptoms supposes a normal condition of organs and system. Many females, however, instead of this regular course have the establishment unnaturally delayed, insufficient, irregular or painful, and in succeeding years, especially after the numerous accidents and conditions incident to maternity. In such difficulties it has been much the practice in times past, and is by many even yet, to attempt to force the menstruation or increase it, or establish it even when there is uncertainty as to the time, or the efforts of nature, or the nature of the hindrance.

It has been stated that once a month there is a physiological engorgement of the generative organs simultaneous with the rupture of an ovarian follicle that results in a flow. This on the one hand may, from causes, be excessive, causing a painful or even an inflammatory condition of the pelvic organs, or even suppressing the menstruation entirely.

Perhaps, in the young woman, she has been overtaxed in study, or overworked in other employments; or outdoor life and recreation have been insufficient. She is depressed and anæmic. She has matured into womanhood very rapidly, vitality has suffered and she is chlorotic. In either case menstruation is probably irregular or absent, delayed or insufficient, and the general health is much disturbed. Sometimes the degree of anteflexion is excessive, and does not become corrected in the new life, and may thereby prove an obstruction or source of pain or inflammation, with consequent monthly derangement; an imperforate hymen may be unknown to the sufferer, and remain undiscovered to the off-hand physician.

The older woman who has experienced childbirth is very liable to accidents therein, as lacerations of cervix or perinæum, which, whether trivial or not as to extent, almost inevitably act as exciting causes to subinvolution with its train of after symptoms, of prolapse, of the various flexions and versions, of inflammation of the uterus, the tubes, the ovaries, the broad ligaments, the pelvic peritonæum,

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or to the cellular tissues; and in consequence of these there is a multitude of perplexing symptoms, along with disordered menstruation. From previous use of caustics there may be adhesive narrowing or obstruction in the os or cervical canal. Exposure, or wet feet, or shock to the nervous system may prevent or suspend the flow. An active scrofulous diathesis, or a developing phthisis may prevent or make it irregular from the consequent anæmia. Again, women from ignorance, more often from evil design, misrepresent facts which they know or suspect, for the purpose of securing riddance of an unwelcome pregnancy.

Probably this includes most varieties and causes of disarrangement of menstruation which we most frequently meet, and for which emmenagogues are most used. If in certain cases we have reason to think the periods are delayed or suspended, and there are no untoward symptoms but apparent good health, there need be no alarm, the case will probably take care of itself; at least there will be time for observation of the case, and seeing what comes next. If, on the other hand, there be anæmia, or the chlorotic condition, or a suspected scrofula, or the tuberculous tendency, the patient will be benefited by improved hygienic advantages; should not be oppressed with study; should have a change; should be in the open air and light, and should be pleased and inspired.

As to medicines in such cases, we almost have specifics in the use of iron, and strychnia and cod liver oil. If at any age there be a checking of the flow after its natural appearance, or if it is suppressed from a sudden cold or exposure, if there is no inflammatory condition, service may be derived from stimulating draughts, as pennyroyal, or quinine, or hot foot or sitz baths. If in the nonparturient there be habitual irregularity or excessive pain, or any extreme in scantiness or abundance of flow there is surely some constitutional vice or a local organic deformity or disease. The anteflexion of girlhood may be extreme and prove permanent; or there may be a retroflexion. Likewise a sharp version may obstruct.

The canal may be so small as to cause retention of menstrual fluid. Therefore, if the trouble is persistent in the young woman there must be made a search for the cause, and the cause be removed. If at older age, particularly after parturition, there is experienced irregularity or difficulty that was not experienced

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formerly, we are almost sure to find organic disease or injury, often laceration of a lip of the uterus, or of the perinæum, causing chronic inflammation or displacement. Polypoid growths or hydatids, fibroid or other tumors likewise obstruct and cause pain. Profuse chronic nasal catarrhal discharges sometimes produce amenorrhœa; so might, we may believe, an abundant hemorrhoidal bleeding, even if not vicarious.

The long list of so-called emmenagogues might be divided into three general classes, as

1. Stimulants, including such remedies as hot draughts of teas, quinine, ginger, juniper, hot foot bathing, etc.

2. Remedies that tend to engorge the pelvic organs, as warm sitz baths, aloes, tansy, warm vaginal injections, cotton root, savin, cantharides, guiac, hellebore and irritant cathartics that act on the lower bowel.

3. Remedies that will relieve congestion and inflammation and relax and quiet pain, as opium, hot stupes, hot pelvic baths and vaginal injections, rest in a lying down position.

In the conditions mentioned of anæmia, and in the cases of delicate health, with or without any special organic disease, the relief or assistance by tonics suggests itself. In all cases of absent or deficient menstruation the physician should have well grounded reasons of the causes before resorting to stimulating and forcing measures of relief, or bad practice will be the result. So far as possible, search for and remove the cause, and a natural monthly flow will be the sequence.

In the unmarried there is sometimes atony or an insufficient development of the uterus or ovaries. Here dilatation or local stimulation by means of the galvanic stem, or marriage, may complete the deficiency.

Every physician must have been impressed with the frequency with which married ladies, as well as the unmarried, the latter often accompanied by the mother, apply for the purpose of inveigling him into bringing on the sickness that was just prevented by that ever ready cold, but which we afterward know to have been pregnancy.

In the past few years, or rather months, wonderful results are

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claimed in the emmenagogue properties of salts of manganese, the binoxide and the permanganate of potash.

It would seem that the cases most suitable for the use of these remedies are those where a vitalizing remedy is indicated. I have, during the past winter, administered the permanganate of potash to probably two dozen cases of irregular menstruation or amenorrhœa, indiscriminately as they presented themselves, where such practice was not contraindicated, but the results, so far as I know, have been negative.

It seems, after all, that we have no medicine that can strictly be called emmenagogue, except as many medicines and measures may prove such on general therapeutic principles.

DISCUSSION.

Dr. C. S. Bond—Mr. President, I think the paper is one worth very serious discussion, because it is upon a disease that perhaps doctors treat more than any other class of cases that come into the office. As a general rule treatment is applied in a way that does the patient harm instead of good. There is one thing that we do not understand, and that is that the uterus, each month, should bleed. What causes this bleeding? In other cases we speak of it as hemorrhage. But in other cases the ova is not found in the uterus at that time. Generally we will find some obstruction from the ovary to the outlet of the vulva which does not permit the flow of blood, or else there is a constitutional disturbance, making the parts not sufficiently strong to produce this overflow of blood. Now, in all cases where we do find some obstruction and some disease of the organs in this direction they should be removed.

Dr. Haughton—I simply have to say that I do not believe that we have come to the time that great care should not be exercised in diagnosis as to the question of emmenagogues as well as the question of the removal of the ovary. I have seen cases where the ovary was removed with the statement that there was a disease which justified it, and yet they were not larger, or but very little larger, than the natural size which is well defined by our works. We ought to be very careful in this direction as to what we do.

Dr. Powell—Mr. President, there is a class of cases of painful

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menstruation where we can not discover any pathological condition existing in the patient. Why it is that a great class of women and girls in the very inception of menstruation are doomed to pain, to continue through their menstrual life, is rather a mystery to me. It has been my observation that girls at their first menstrual period, without any exposure, without taking cold, or any condition that would tend to bring on painful menstruation, will suffer extreme pain during the menstrual period. It has been my observation if she suffers during the first, she is doomed to suffer pain during her life. In a few instances marriage may change that condition, but in a majority of cases it will not. You may examine the case carefully and you will not find any displacement of the uterus; you can not find any tenderness of the ovary. If there is a displaced womb I can detect it, but when I have a case with nothing wrong but the pain, then I am at my wits end; I hardly know what to do.

Dr. Harvey—Mr. President, one word upon the subject of permanganate of potash. I have used it for about two years, ever since it was first suggested. I have had some failures, it is true, but I have found it the most reliable remedy to give of any medicine that I know of; I don't know why. I give two grains of permanganate of potash three times a day in pill form, compressed tablets, instead of giving it in the solution. I have found it to be acceptable to the stomach, and I have found better results; and I think it is as safe a remedy as one could give. It is empirical in its action of course. That it has local effects I am informed by Dr. Wishard. Some one in Chicago made the suggestion of using it as a local remedy. Dr. Wishard has been using it.

Dr. Rea—Mr. President, part of my experience goes with the emmenagogue. I find in anæmic cases that suppression of the menses is sometimes an effort on the part of nature to sustain the system. In such a case of course the conclusion is to let the part alone and to build up the system, and treat the disease that exists. For plethoric cases, I regard saline remedies as best. So far as permanganate of potash is concerned, I have tried it in only a few cases, but not enough to determine its results to a certainty.

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UREA.

BY C. S. BOND, M. D., RICHMOND, IND.

This is a compound of carbon, hydrogen, nitrogen and oxygen, and is expressed by the symbol $CH_4 N_2 O$. It is prepared artificially by treating cyanate of potassium (K C NO) or cyanate of lead (Pb_2 CNO) with sulphate of ammonium, which yields cyanate of ammonium (NH_4 CNO), and a solution of this cyanate of ammonium when heated changes to artificial urea ($CH_4 N_2 O$). The principal source of this compound is, however, found to be in the urine of mammalia, and is here in consequence of the oxidation of nitrogenous elements of the tissues composing the body. It represents the complete combustion of these elements, and is the principal compound eliminated by the kidneys of this order of animal life, about one-third of the solid matter in the urine being urea, or one and one-half per cent. of the urine is composed of urea. This per cent. varies in different individuals and in the same person at different times. In the first place, the daily quantity of urine excreted by the kidneys is not by any means a uniform quantity, but is dependent upon many factors affecting the individual. Any artificial or natural stimulant that causes an increased blood pressure in the Malpighian tufts or in any way affects the rate of circulation or increases the quantity of watery elements in the blood, at the same time increases the amount of urine voided in a given time, and therefore alters the relation existing between the watery elements and urea. On the other hand, any agent that lessens the general blood pressure on the kidneys, or diminishes the quantity of liquids taken into the circulation lessens at the same time the quantity of urine in twenty-four hours. Age also affects the quantity of urine excreted in a given time. Children do not excrete as

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much urine as do older persons. It has been found—leaving out all other causes of variation from the normal excretion—that the healthy, full-grown man, weighing about one hundred and forty pounds, excretes nearly fifty ounces of urine in twenty-four hours, and that this quantity gradually diminishes as we pass to persons of less weight. The urea likewise diminishes in the same ratio from a greater to a less weight. The amount of urea excreted in a stated time also varies, not in proportion to the normal variation due to circumstances affecting the quantity of urine excreted. When fluids are abstained from, the urine may contain as high as six per cent. of urea, or when fluids are taken in large quantities it may be reduced to .8 per cent. Again, articles of diet, fasting, exercise, and mental condition cause a normal variation of several grammes within the twenty-four hours. It is estimated, from many observations, that this degree of variation in the healthy adult, living on a good, wholesome diet is from 25 to 40 grammes in the twenty-four hours. A person living entirely on animal food excretes from 51 to 92 grammes in twenty-four hours; on mixed food, 36 to 38 grammes; on vegetable diet, from 24 to 28 grammes; on non-nitrogenous food, 16 grammes; and a person who fasts may pass only 8 to 10 grammes in twenty-four hours. The amount of urea discharged in the urine differs at various periods of the day, being least in that voided in the morning and greatest in the urine passed at evening. In order, therefore, to obtain a fair result for twenty-four hours, you should have a specimen of urine taken from the total quantity voided within this time.

As urea is a normal excretion of the body, and is the result of the oxidation of the unstable nitrogenous compounds of the tissues, it follows that a variable quantity of this substance is always in the blood of every healthy individual. The quantity of urea which can thus be kept in the blood without producing toxic effects is also quite variable, and depends upon the susceptibility of the individual at the time. Very small quantities have been found in the blood of patients known to be suffering from its effects, while, on the other hand, very large amounts of urea have been discovered in the blood of persons not known to have been so affected. It may be safely affirmed, however, that there is a limit beyond which the blood can not contain urea and the individual still maintain

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health. What this limit is in all cases no one can tell until after the individual has passed it and fallen into a condition of ill-health.

The elimination of urea is a constant process, and the substance so thrown off comes, in the blood, in direct contact with the vital process going on in the cells. It is thrown off by the kidneys by osmosis in large quantities, and requires therefore rapid elimination that an abnormal quantity may not be found in the blood and interfere with these processes. Whatever cause, therefore, that interferes with the rapid elimination adds, at the same time, to the urea in the blood. Among the more prominent of these causes may be mentioned the arrest of the function of the kidneys from pressure on the renal veins, obstruction of the renal arteries, or from obstruction originating in the kidneys themselves, as in cases of Bright's disease; from tumors involving the ureters and urethra, and from suppurative nephritis, or conjestion of the kidneys. In all these cases, whatever may be the primary lesions, the result is an accumulation of urea in the blood, and a more or less toxic influence is generally felt by the individual. This influence may soon become so great as to cause uræmia, or it may simply cause headache, slight vertigo and insomnia. Many theories have been advanced concerning these effects, in the blood, of urea, some authorities claiming that urea was not poisonous, but that it was decomposed in the blood into carbonate of ammonia, and that this agent produced toxic effects. Other authorities claim that these manifestations depend upon the presence of kreatin and kreatinine in the blood. Many other very ingenious theories have from time to time been advanced by leading men in the profession, but the majority of thinking men of medicine now believe that uræmic toxæmia is the sole cause of all these manifestations; but just how, in all cases, urea produces its effects on the various tissues is not known.

The danger in Bright's disease, conjestion of the kidney and obstructions in the urinary tract is not so much the local lesion as the results which follow such obstructions. Within the last few years it has been clearly shown that there is but one constant and pathognomonic condition in Bright's disease, and that is deficiency of urea excreted by the kidneys and a consequent accumulation of this substance in the blood. In these cases albumen is found at times, and at other times not. It may be found in the morning

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urine and not in the evening urine of the same patient. It may be found in slight quantities in very *severe* cases of kidney disease, and in *great* quantities in a *very slight* case. It may also be found in healthy urine at different times, and is a constant product of certain rare cases. Casts may also be present or absent. Very often absent in serious chronic conditions of the kidney, and in great abundance in cases not presenting any dangerous symptoms. Œdema may be present or absent in most cases of Bright's disease; is sometimes present in one part of the body and at other times in another part. It is a very common symptom of other diseases.

Urea in the blood may cause uræmia, dyspnœa, vertigo, blindness, nausea, vomiting, swelling of the limbs or face, palpitation of heart, hypertrophy of heart, twitching of any or all of the muscles, a feeling of being constantly tired without exertion. It may lead to any serous inflammation, as pericarditis, pleurisy and peritonitis. A number of these symptoms may be induced at once or only one or two be prominent at a time. If a man, therefore, weighing 140 pounds is known to be constantly passing only about ten grammes of urea every twenty-four hours and suddenly has pericarditis, or persistent vomiting, no one knowing these facts would be much surprised; but on the other hand, if these diseases should arise and no account having been taken of the urea voided daily by the patient, much surprise might be had by finding that the real cause of all the patient's trouble was due to the fact that he only passed ten grammes of urea daily. In my judgment many of the petit ills which flesh is heir to, depend for their explanation upon the significance of this fact, and depend in some way on the presence of urea in the blood. It becomes, then, a matter of primary importance, not to see whether the urine contains albumen or casts, but to ascertain the average daily quantity of urea voided by the patient, under the varying conditions of his habits of life. There have been several methods suggested from time to time, all of which have some points in their favor, but most of them requiring too much time, for the busy practitioner, to be of service in general practice. Liebig's method not only requires an hour or more of time, but also the careful attention to particulars, a mistake in any one of which, at any time in the test, will invalidate the result, and require that the test be made over again. Davey's method depends

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upon the fact that urea is very readily decomposed by hypochlorite of soda, potash or lime, and nitrogen being evolved. From the quantity of gas evolved the quantity of urea is determined. It requires about two or three hours for this test to be completed. Fowler has modified this test and obtains the quantity of urea by noting the difference, before and after the decomposition, in the specific gravity of the liquid. In this case a very slight difference in reading the variation on the uranometer will effect very greatly the result. Unless an urinometer can be marked in much more accurate manner this modification must lead to error.

Some one has improvised an apparatus for measuring the nitrogen gas as it is evolved, and also a graduated bottle and test tube for measuring the quantity of hypochlorite of soda, and urine used in the test, and is subject to fewer criticisms than any other method within my knowledge. This test requires that a given quantity of urine taken from the whole quantity of urine voided in twenty-four hours, shall be placed in a bottle containing a known quantity of hypochlorite of soda, of sufficient strength to completely decompose the urea present. At once this bottle is stopped by a perfect fitting rubber cork containing a glass tube, which, by means of rubber tubing, connects the interior of this bottle with a graduated glass receiver, also fitted with rubber cork and glass tube and containing a given quantity of water. At the bottom of this vessel is another opening and rubber tube attached for the purpose of conveying off the water that is forced away by the generation of nitrogen gas in the former bottle. This second bottle or tube is graduated into per cent. and tenths of per cent., and as the water is displaced by gas, can be read off on this scale. By gently shaking the bottle containing the soda and urine the gas can be made to come off very rapidly, and often you can tell in a few minutes the quantity or per cent. of urea. If now the total quantity of urine passed in twenty-four hours be also known, the total number of grains of urea passed in twenty-four hours can be found.

I have been using this test for almost a year, and have tested it with most other methods and find it very accurate, and it is not liable at least, to two of the objections urged against the other methods—those of time, and effort consumed, in the tests. Within

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this year I have made one hundred recorded tests of urine supposed to contain a deficiency of urea, from some one or more of the toxic symptoms manifest in the patient. The results of these examinations have been, in many cases, very instructive as well as of great advantage to the patient. Some of these patients had no trace of albumen, no œdema, no casts in the urine, at the times of examination, but passed constantly only from ten to fifteen grammes of urea in twenty-four hours. Most of such complained of a feeling of general weakness, vertigo, nausea and an irritable condition of the heart, though no constant symptoms were in all cases invariably present. Some of them had been having the same symptoms at longer or shorter intervals for several years, while others had had them but for a short time. Other cases had a slight trace of albumen constantly in the urine; still others had a history of having had œdema of limbs or face, or had this condition at the time of examination. One patient, a boy about twelve years of age, had none of these symptoms, but complained of periodical attacks of pain in the right side just above the crest of the ilum, and I supposed it was a condition of chronic inflammation near the ilio-cœcal valve.

After using medicines to correct this difficulty without success, I made an examination of his urine, and found at the time *of these attacks*, a great deficiency in the amount of urea excreted. No albumen or œdema was present in this case. Another case had had several attacks of œdema of limbs, albumen in urine, irritable heart, nausea, headache, vertigo and feeling of general weakness. Patient recovered from most of these symptoms, but still did not pass a sufficient quantity of urea; at last fell into the hands of another physician and died from pericarditis. Two cases of this termination are among my notes, and are the result of the toxic effects of retained urea on serous membranes, and require at the first step of their development the rapid elimination of urea from the blood.

So closely are the various symptoms associated with retained urea, that one can predict, after making a careful examination of the urine in this respect, the condition of the patient with a degree of accuracy, in cases where many recorded examinations have been made for the same patient. In all cases of retained urea the treatment should aim at the rapid elimination of the urea. Among the most efficient of these are the saline cathartics, diuretics and sudorifics.

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I wish to call especial attention to the use of digitalis in these cases, and in particular where an irritable heart is a prominent symptom. Digitalis seems to have some special influence in these cases outside of its therapeutical effects, and appears therefore to be demanded in very many of all cases suffering from retained urea. There seems to be a very strong tendency under this treatment for such patients to get better, and many seem to be apparently well. Call these conditions of suppressed urea by what name you will—congestion of the kidneys, uræmia or Bright's disease; they are very much more common than is generally supposed, and have a much better prognosis, with careful urinary tests, and wise attention, than text-books are wont to make us believe.

DISCUSSION.

Dr. M. Baker.—Mr. President, I am very thankful to the doctor for his very able paper. It is a matter I have been giving some little attention for some years. We find a great many cases that it is hard to diagnose from the fact that—

A Member.—I don't understand that it is proper to discuss the matter. The question is on the reference to the committee on publication, and if we go on in this way we will never get through with our programme.

Dr. Blount.—Mr. President, it has been the custom of the society for years to discuss the paper before the question of reference is put.

The President —That has certainly been the custom.

Dr. Boyd—It is not only customary but it is parliamentary usage.

The President.—Proceed with the discussion of the paper.

Dr. Blount.—I am very well aware that physicians do not scrutinize their cases sufficiently, and they do not examine the secretions and excretions of the body as carefully as they should in order to derive proper ideas in reference to the condition of the patient. This paper brings to our attention some of the dire evils that retained urea produce upon the body. We all know that a diseased condition of the kidneys develops trouble in the heart, and membranes and muscular tissue itself. We have seen the dire evils, and if we can trace the connection and establish beyond a doubt that the

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retained urea in the blood is the prime factor in the disturbance we may cut off that evil. I believe this question is worthy of much more than passing notice.

Dr. Mendenhall of Illinois.—Mr. President, I can say that this paper just read has a great deal of value. I believe these kidney diseases are getting to be more and more common every day. In a great many cases that I have had where the urine is very heavily loaded, I have had grand results from bicarbonate of potash combined with hyoscyamus extract. It unloads the urine and clears it up in some cases with very wonderful efficacy.

Dr. Bond.—Mr. President, and Gentlemen of the Society: I was in hopes this paper would have a free discussion, because I only made a synopsis. I can not put a paper of this kind before you in anything like a complete way. I have been very much surprised in my investigations on this subject to find the number of patients who come to the office feeling weak, and all the time tired. Every physician has patients coming to him almost every day, and he gives him this thing and that thing and yet he does n't get any better. They feel tired, and they can not give any account of it. Weakness is the principal symptom. You will be surprised to find on examination of the urine a great deficiency of urea, and you will be surprised when you put him under this course of treatment and get his kidneys at work, move his bowels freely, to find that he gets better. Some of them will after a few months relapse again into the old condition, but you put them on the old treatment and they will be relieved. You can get the apparatus by writing to Charles Haven & Co.

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FOREIGN BODIES IN THE BLADDER.

L. H. DUNNING, M. D., SOUTH BEND.

A brief history of two cases that have fallen under my observation and care forms the text for a few remarks upon the subject stated in the title of this short paper.

Case 1. Mrs. A., age 38, married, a lady of culture and refinement, was delivered four years previously of an hydro-cephaloid child. The delivery was instrumental, and whether from long pressure of an abnormally large head, or from maladroit use of instruments, I know not, a vesico-uterine, or vaginal fistula resulted.

The precise location of the original opening of the vaginal, or uterine extremity of the fistula, I am unable to give, for two operations had been done for its closure, both of which were unsuccessful.

The last operation was in January, 1883, and in the following December I was consulted in consequence of uterine pain and burning in the region of the bladder, and pain at the close of urinating. The patient stated that she had, a few weeks previously, passed a small stone by the urethra, and now thought there was another, and larger, one present. An examination with the sound confirmed her diagnosis. I proceeded to remove the stone, assisted by Dr. S. L. Kilmer.

The urethra was dilated with a three-bladed dilator. The stone was crushed with a Thompson's lithotrite, and removed with Biglow's evacuating apparatus. We were both confident that all the stone was removed. The patient made a good recovery, but was not entirely relieved of the bladder symptoms. March, 1884, I was again called to remove a stone, which the patient stated she had felt with the large end of a shawl pin introduced into the bladder through the urethra.

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This time, assisted by Dr. M. L. Moore, a large quantity of stone was removed in the same manner as at the first operation. The lithotrite was introduced three times, and the last time it was withdrawn, we found within the grasp of its closed blades, a silver wire suture, with the loop cut, but the twist intact. The whole was coated with phosphate of lime deposit. We now felt confident we had secured the foreign body around which the calculus had collected. The patient stated to us that she had been aware ever since the last operation for fistula that there was a wire left behind, and that she had once visited the surgeon to have it removed but it could not be found.

There are many other points of exceeding interest connected with this case, but they are not pertinent to our subject, hence will be omitted. There was a band of dense cicatricial tissue extending transversely across the fundus of the bladder. Posterior to this band was a pocket, in the bottom of which was the vesicle extremity of the fistula. In this pocket lodged the stone, which was evidently made stationary by the suture which remained partially embedded in the tissues.

That the wire rendered the stone stationary finds support in the fact that July 18, four months after the wire was removed, a fourth and large calculus had formed in the bladder, and was quite movable. The last calculus was readily crushed, and voluntarily expelled from the bladder along with water freely injected into the organ. Since this fourth stone was removed there have been no signs or symptoms of a calculus in the bladder.

Case 2. Mr. B., a laborer, age fifty-seven years, was brought to me by Dr. J. A. Kettring, September 19, 1885, for the removal of a foreign body from the bladder. The patient stated that about the middle of August he passed a cigarette holder into the orifice of the urethra, that it slipped away from him and passed into the urethra, and in his efforts to remove it he pushed it into the bladder. Being a mechanic, he had invented an instrument with which he attempted to remove the body, but without success. I sounded the bladder, and found the holder lying obliquely across the organ. I judged it to be about two and one-half inches long and as thick as a small lead pencil. A number 18 E sound dropped readily into the bladder, and since the urethra was of so large a caliber, and the patient had

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frequently passed his instrument along its tract, I concluded to attempt its removal without further dilatation. A Thompson's lithotrite was introduced, and the body seized, but I was made conscious that the instrument did not grasp it at the end. So I withdrew the lithotrite, and introduced a sound, and endeavored to bring the long diameter of the holder in line with the urethra. Now, with but little difficulty, the end was grasped by the blades of the lithotrite, and I proceeded to withdraw the whole. It soon became evident that we had not rightly estimated the size of the holder, for although it, together with the instrument, entered the prostatic portion of the urethra, we had considerable difficulty in making it advance through the membranous portion. However, avoiding much force, but keeping steadily at work, with the aid of Dr. Kettring, I succeeded in withdrawing it to within one and one-half inches of the orifice of the urethra. Further than this we could not advance—so the urethra was incised posteriorally down to the end of the holder, and by applying pressure from behind, it was made to enter the incision, and was finally entirely withdrawn. We were surprised to see the size of the holder, and its breadth when in the grasp of the lithotrite, thirty-five millimeters. There was a moderate amount of hemorrhage from the urethra or bladder, probably from the membranous portion of the urethra, since that is the most constricted portion of the canal. The bladder was washed out with tepid water, and the patient taken to his home in a closed carriage; the operation having been done at my office on account of the patient refusing to have it done at home, for fear of exposure. Soon after reaching home, the patient had a chill, followed by fever. In the next twenty-four hours he had three chills, each time followed by increased fever, the temperature ranging from 102° Fahr. to 104°. The urine passed freely, mixed with a considerable quantity of mucus, and a little blood.

20th, 1:30 P. M. Patient seen by Dr. Kettring and myself, and had a temperature of 106° Fahr. He voided urine in our presence. It was quite bloody, and, upon close examination, was found to contain a wedge shaped piece of mucous membrane, twelve millimeters long, and four millimeters broad, and about two millimeters thick. This was not examined with the glass, but was supposed to be from the membranous portion of the urethra, since at that point there

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was the most resistance. There was also voided at this time, several small gravel, some as large as wheat grains. Patient complained of considerable pain. Bladder was washed out with warm carbolized water; 20 grs. of quinia sulph. were given, one gr. of opium, and 10 grs. acetate of potash, every four to six hours, and a milk diet ordered. Further than this I will not attempt to minutely detail the history of the case, but will simply outline it. In the next twenty-four hours the patient had four chills. The temperature ranged from 101° to 104–5°, and pulse from 108 to 120 per minute. Patient perspired profusely, and was at times delirious. Great nervousness; prognosis now regarded unfavorable. Whisky in half ounce doses every hour, when the temperature mounts high, was added to the treatment. Dr. Kettring washed out the bladder twice every day, using for the purpose a soft rubber catheter and a rubber bag. We debated the advisability of this procedure, but found that by this means we removed a considerable quantity of turbid urine, small clots of blood, and occasionally small grains of gravel; and further, the cleansing of the bladder seemed to afford the patient relief. So we decided to persist in it as long as its use was indicated.

22d. Patient slightly delirious, pulse 112, temperature 101° Fahr. Slept moderately well last night. Has had no chill since 9 P. M. yesterday.

Dr. Kettring found morphia gr. $\frac{1}{6}$, ar. spts. ammonia $\frac{1}{2}$ dr., very efficient in relieving or aborting the chills. At noon to-day patient seemed much better. At 9 P. M. temperature had fallen to 100°, and pulse to 90, but the urine had accumulated in the bladder and had to be removed by catheterization.

23d. 7:30 A. M. Patient rational; has slept well during the night, and voided urine frequently. Pulse is 70, and temperature normal. The nervous symptoms have nearly disappeared. Had symptoms of a chill last night, which quickly disappeared under the effects of the morphine and aromatic spirits of ammonia, with the addition of 10 drops of chloroform. From this time forward, the recovery was uninterrupted. In one week the patient was able to sit up; a few days later he was walking about the streets, and in two weeks after the operation he resumed work. Thus happily terminated a case that at one time was exceedingly alarming, in con-

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sequence of the intense urethral fever that developed. It would undoubtedly have proven fatal, had it not been for the skill and unremitting attention bestowed upon the case by Dr. Kettring.

On reviewing Case 2 some interesting points may be raised, which it may be profitable to discuss. One of these points is: given an accurate knowledge of the size and shape of the cigarette holder in the bladder, what method of procedure should have been selected for its removal? In answering this question it will be necessary to discuss the subject somewhat in general, *i. e.*, to state the general principles underlying operative procedures for the removal of foreign bodies from the bladder. To determine the best manner of proceeding it is necessary to know the size, shape, consistency and all other characteristics of the foreign body possible to obtain. Such information can generally be given by the patient. When it can not be given by him the lithotrite should be introduced into the bladder, and search made for the body. When found, it can be grasped between the blades of the instrument, and thus may be determined approximately its diameter. Its length may usually be determined by the same instrument by following it the whole length. Its mobility can likewise be ascertained, and its consistency by percussing with the male blade of the lithotrite. It is surprising what an amount of information can be obtained regarding the position, characteristics, etc., of the foreign body with this instrument. Poulet * speaks in high terms of an instrument invented by Collins, of whom he says: "He has thus solved one of the most difficult problems of the application of the acoustic method to surgical exploration." One end of this explorer resembles the two blades of a lithotrite. The male blade carries in its interior a small pedal, upon which every body grasped by the lithotrite will rest. This pressure has the effect of establishing a mechanical contact, which is shown by the noise of a small resonator placed in the handle of the instrument. Coulson † states: "The bodies may be divided into three kinds. Some are small and oval, more or less soft, and capable of being flattened or extracted whole. The second is composed of flexible bodies, as bougies, etc. In the third

*Poulet's Foreign Bodies in Surgery, Vol. 2, p. 166.

† Coulson, Diseases of the Bladder, p. 264.

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species we have long, inflexible substances, which can be extracted only in the direction of their long axes."

Of these classes, bodies belonging to the first two can nearly all of them be withdrawn through the urethra in the grasp of the lithotrite. Small round or oval bodies will sometimes be voided spontaneously, or can be made to enter the urethra by distending the bladder, then forcibly expelling its contents. By this method a female patient of mine (case 1) expelled the fragments of a large calculus, after I had crushed it with a lithotrite. Small bodies may sometimes be drawn into the eye of a large catheter, attached to a Biglow's evacuating apparatus. This means can not be depended upon, and has a limited range of applicability. As a rule other means must be sought for the removal of the body, and the question must be decided whether they can with safety be removed through the natural passages, or whether the bladder must be reached through an opening in the perinæum, and the body brought out through the artificial passage. In some cases it may be found necessary to incise the neck of the bladder even before success will crown the efforts of the surgeon. It may be stated as a general rule, to which there will not infrequently be found exceptions, that bodies which have entered the bladder through the natural passages can with success be removed through the same passages without doing violence to any of the tissues, that is, provided they have not remained so long in the bladder as to become coated with calculous deposits.

In making up the decision as to the method of its removal it must be remembered that the thickness of the blades of the instruments to be used must be added to the diameter of the foreign body. Here the value of the lithotrite is again seen, for with it the body can be seized and its diameter measured by measuring the distance the blades have been separated by the body. This study of the size of the body is not frequently required in the female, for no other method is often necessary than that of dilating the urethra and removing the substance with a forceps or lithotrite. In the male, however, there is a definite limit to the capacity of the urethra, and if the foreign body be of glass, or of any other substance likely to have sharp points upon breaking, or does it belong to the third class already stated as according to the division of Coulson, and

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nearly the size of the normal urethra, it is best not to attempt its removal by the natural passages. For as already stated, the size of the instrument added to the already large size of the body would make the whole too large for passage through the urethra without harm, possibly fatal to the patient; and it would not be safe to break a glass body in the bladder so as to remove it piece-meal. Hollow tubes, such as a silver pen holder, or a catheter, or a long body of some soft material, may, if seized in the center of the end, be crushed by the blades of the lithotrite so that the diameter of that instrument will not be greatly increased. It is pertinent at this point to inquire what is the normal capacity of a healthy urethra. Upon this subject I find considerable conflict of authority, and I need not enter upon an elaborate discussion of it. However, it will not, I think, be inappropriate to briefly notice some of the views and statements of a few of the leading authorities. Otis * claims to have discovered a means of determining, approximately at least, the size of the normal urethra. His theory is, "the urethra bears a just relation to the size of the flaccid penis." From numerous experiments he claims to have discovered that in a subject having a penis measuring in circumference

3 in.	the urethra	will	have a	capacity	of a	No. 30	F. sound.
3¼	"	"	"	"	"	32	"
3½	"	"	"	"	"	34	"
3¾	"	"	"	"	"	36	"
4	"	"	"	"	"	38	"
4¼ to 4½	"	"	"	"	"	40	"

He states† that, "The correction of this proportionate relation has been verified by the author's careful measurement in over one thousand consecutive cases, without meeting with a single exception in infancy, childhood, adult life or old age." Keyes,‡ on the contrary, who is considered by many equally as good authority upon the point in question, states: "There is no just measure of size for the urethra so far as I am aware. The arbitrary decision that because a penis in repose measures three inches in circumference the diameter of the whole course of the urethra must be thirty milli-

* Otis' Genito—Urinary Diseases and Syphilis, p. 441.

† Otis' Genito—Urinary Diseases and Syphilis.

‡ Keyes, Venereal Diseases, p. 296.

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meters has a foundation only in the theoretical accuracy of its originator." He then adduces arguments that seem conclusive, and quotes the conclusions of Prof. Sands, whose casts of four urethræ all show that there is no uniformity in the size of the urethra and no regularity about it.

My own experience, which, however, has not been extensive enough to give it much weight, inclines me strongly to the belief that Keyes' conclusions are correct, and that there is some fault either in Otis' method of exploration or his statement of facts. However, the statement of this controversy will throw no light upon the subject under discussion, except indirectly. It tends indirectly to illuminate our subject in this wise. Given: a foreign body in the bladder, its size, shape, location, etc., is known. Now, with a knowledge of the size of the normal urethra, we will be able to make a fair estimate of the possibility of our removing it through that tube.

The best, and really the only test of the capacity of any urethra is measuring it, and if in a normal condition its capacity can soon be determined. It must, however, be remembered that the fullest capacity of a normal urethra can not always be determined upon the first passage of a sound or bulbous bougie. Often the tissues of the urethra are so sensitive as to rebel against the presence of the cold steel, and spasmodically contracts in front of it, and thus simulate a stricture or normal constriction. In Case 2, as reported, it was found that a No. 18 (English) sound passed readily into the bladder, indeed, dropped into it by simply giving the proper direction, and that if the holder were no larger than stated to us by the patient there was plenty of room for its removal, and the sequel showed our supposition to be true, for, as you observe, the lithotrite, with the holder in its grasp measures thirty-five millimeters, which measurement is equal to a No. 21 (English) sound. Now, having determined that the body can be removed through the natural channel, the urethra should be prepared to tolerate the procedure by passing a few times the largest sized sound it will permit. This serves another good purpose, that of dilating the urethra to its fullest capacity. The matter of selecting the instrument for seizing and withdrawing the body is of considerable importance. Poulet, in his Treatise on Foreign Bodies, figures a great variety of instruments for this purpose. He divides them into three classes: 1. Sim-

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ple prehensors. 2. Redressors or pliers. 3. Duplicators. In the first class the instruments are all modeled after the modern lithotrite. The broad, flat-headed lithotrite is the instrument that has met with the greatest favor. Indeed it may be said to fulfill nearly every indication requisite to accomplish the end in view.

It is my belief that with Thompson's lithotrite the surgeon can, if he possesses the requisite skill and patience, seize and extract nearly every foreign body capable of removal through the natural channel.

A certain number of cases will require the use of a redressor, which is an instrument with which the operator can seize the body, and then, by manipulating a wire connected with the male blade of the redressor, turn it so as to bring the long diameter of the body into the axis of the instrument. The cases to which this instrument is applicable are those in which the foreign body is small, long, and inflexible. Of this class Collins's instrument is held in the highest esteem by the author already quoted.

As a rule, no effort should be made to extract the foreign body until the urethra has been properly prepared, and the bladder moderately distended by warm water injected into it. In seizing the body the same rules will apply as in ordinary lithotrity, and need not be detailed at this time. In the case of a long, inflexible body it must be seized at the end, and to accomplish this the skill of the surgeon will oft-times be taxed to the utmost. Caudemont has declared a principle that is serviceable in determining the part of the body grasped. It is as follows:

"If after having seized the foreign body traction is made upon the instrument, the latter undergoes a lateral inclination, the groove of the female blade is always found on the shortest side of the foreign body. If the latter is grasped in the middle the instrument remains straight, but if it is seized near one end the hand which holds it will experience in withdrawing it a greater resistance than on the other, and the lithotrite will incline to the side of the shortest portion."

A recollection of this principle will be extremely useful to the operator, for having determined which is the short end, he can readily loosen the lithotrite and slip it along the body until the end is reached, and then include it in the grasp of the instrument. The

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writer of this paper, not being aware of this principle as stated, brought the long diameter of the body into the axis of the urethra by means of a sound passed behind the body near the extremity closest to the urethra, and then gently drawing upon it and withdrawing the sound. Great care should be taken in removing the body lest the neck of the bladder be injured or violence done the urethra.

Should the foreign body be arrested at any point along the urethral tract, it may be opened by incision from without and the substance removed through the incision. The surgeon will not frequently be called upon to employ other means than those already detailed.

When these means fail, or the foreign body is too large or too ill-shaped to be removed through the natural channel, is sharp pointed or imbedded in the walls of the bladder, lithotomy should be resorted to. Which method, the lateral or medium, is adopted, will depend upon the preference of the surgeon. The latter would be my choice if the foreign body were not too large, since it is somewhat less dangerous to the patient, and easier of performance. We conclude, in reviewing the evidences bearing upon the results of the different methods of removing the foreign body from the bladder, that while lithotomy is the simpler method, it is more dangerous to the patient than extraction under favorable circumstances, but it has the advantage of being successful in instances in which efforts at extraction have been of no avail.

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WHY, AS A RULE, DOES ONE ATTACK OF A SPECIFIC DISEASE PROTECT FROM A SECOND OF THE SAME KIND?

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In the discussion of, or theorizing upon, a subject, so broad, so endless in its variations, and so largely in the realm of speculation, it will be necessary to limit our premises, and endeavor to confine ourselves to only such discussion as may be logically germain to the letter and spirit of the subject. To be liable to disease necessarily implies the presence of a body or organism, upon which either in part or whole, interferences of function may act. Given, then, these factors—a body to be acted upon and agents of functional disturbance, we ask, what is a body or organism? And the answer—an aggregation of living matter, leads to a brief consideration of such matter. Living tissue has for its distinctive properties: 1. Its chemical composition, resultant, in a substance, which in its primary state is protoplasm. 2. Its universal disintegration and waste by oxidation, and its concomitant re-integration by the intussusception of new matter. 3. Its tendency to undergo cyclical changes. Again, living matter, or protoplasm, in addition to these properties, may further be regarded under four aspects: 1. It is possessed of an external and internal form called structure. 2. It occupies a definite position in space and in time. 3. It is subject to the operation of certain forces, in virtue of which operation it undergoes internal changes or modifications. 4. Its form, place and powers are the effects of certain causes, governed by fixed laws. In the higher animal tissues the modifications which the cells undergo are so extensive that only with the aid afforded by the study of descent can we know that all tissue begins its existence as a single, simple cell, fundamentally identical with the changed or modified

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cell of adult tissue. This knowledge leads to the formulation of the proposition that, a specific body or individual, whether viewed as a whole or in any of its parts, consists of but one fixed unit of growth —the cell, which through the entire series of cell-generation is but a cell-cycle. A morphological unit which represents, and is, the primary and fundamental form of life. An individual mass of protoplasm in which no further structure is discernable, for neither is the so-called cell wall nor the nucleus an essential or ever present constituent of the cell. And in those lowest types of independent life, in which is presented a form but little in advance of the primary structure, up through the entire range of the higher organized forms of living tissue, is recognized the same morphological unit variously modified; or, to more tersely express it, protoplastic aggregations, adapted by fixed laws to special ends. Yet in all these complex combinations of this unit no cell has arisen, save from the protoplasm of a preëxisting cell.

But in developmental descent, every cell proceeding from a cell, closely resembling every other, down through a series of stages of gradually increasing divergence, finally reaches a condition in which it presents the characteristic features of a special tissue, hence it is that cell development is a gradual process from a general form to a special state. And with this gradual modification from the primary cell to tissue whose special ends are probably to meet, as resistants, special external forces, may it not be predicated that, having undergone such divergence from the unit-type to the end of special and different adaptations, these higher forms are as variously affected by special forces. That is, may not special forms be created and the amount of such specialized tissue variously proportioned in different individuals, to be recipients of special poisons, and in direct proportion to the preponderating cell-tissue so liable to special attack lies the body's ability as a whole, to meet and conquer or to be conquered in such a conflict? But why this variation? Investigators tell us that there are three causes of variation:

1. In virtue of its molecular structure the organism may tend to vary. This variability may be indefinite or limited to certain directions by intrinsic conditions. Id the former case the result of a struggle for existence would be the survival of the fittest among

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an indefinite number of varieties; in the latter it would result in a survival of the fittest among a certain set of varieties.

2. The organisms may have no intrinsic tendency to vary, but variations may be brought about by the influence of conditions external to them. In this case, also, the variations may be indefinite, or definite by intrinsic limitations.

We may have a combination of the foregoing causes. We have briefly outlined the way. The laws which govern the normal growth and variation of cell-cycles are those denominated physiological, with which we now have nothing to do. It is when, upon this cell structure are brought to bear forces, which tend to vary, alter or destroy, the physiological functions producing those conditions known as pathological, that your attention is invited. When the forces of life are working physiologically, the body or tissue, so governed, is said to be in health, but any deviation from this standard, that affects any of the functions or component parts of a body or tissue, is known as disease. Disease acts upon the organism, and produces consequent variations, by a combination of the second and first causes of variation; i. e., by forces operating externally and by intrinsic conditions. In the case of the specific poisons, whatever may be their nature, the body of the sufferer, is in the main a passive agent, and is acted upon by a virus, which coming from without, is intruded upon him and, *nolens volens*, those cells in his tissues susceptible to the action of this poison must submit. Probably there is no reason for holding that the specific poisons do of themselves vary in their intensity beyond rather restricted lines. Epidemics do no doubt vary, but in the aggregate the limit of deviation from average intensity, as noted in different epidemics, is as nothing, compared with what is seen, in different individuals, attacked during any one outbreak, apparently under like circumstances. For example: we constantly see, the possibility for two persons, infected from one source, with the same virus, to show, the one, an eruption of but a few spots, with slight febrile action, while the other develops confluent or hemorrhagic exanthema with intense fever. The proposition is, that a specific poison is intruded upon the organism. Having forced an entrance, it selects its specialized tissue, and for a time, fixed and definite, produces, more or less violent disturbance of health, but after a time such disturb-

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ance ceases, and ceases completely, leaving the body unmodified, with the exception that it is no longer liable to the influence of this poison, this immunity lasting only during the life-time of the individual not transmissible to his offspring, except in a very slight degree perhaps. But how is the immunity gained? We hold that specific poisons act as continuous molecular changes—not as parasites, but as poison producers, not living upon their hosts, but multiplying, infecting and destroying them. Says Simon: "'The respective contagia' of given diseases seem all to have in common this one characteristic, that in appropriate media, among which must evidently be counted any living tissue which they can infect, they are capable of self-multiplication." This compels us to look at life as a never-ending conflict between the energies embodied in the structure of the organism and the forces arrayed against them in the environment. The relative strength of the conductors is expressed by the issues, disease, death or health. Thi conflict is one of atoms and molecules, not of molar or ponderable parts; not that we deny that there are average conditions to be subscribed to for the healthful action of every whole, but this is not less indisputable of every organ and tissue and cell.

Says Mitchell: "If we know the uniformities in the environment of any species, we can infer the corresponding adaptations of function and structure in that species, life being possible for the individual and race only by the continuous adjustment of internal functions to external forces." Hence, we may assert of an individual exposed to the action of a specific virus, that this virus, this external force, acting upon the specialized cell tissue of such individual, a conflict is set up between the liable cells in his tissues, which are governed by fixed physiological laws, and this outside force. For as Simon says: "In the physiology of metabolic contagia no facts are more characteristic or more important than those which show the relativeness of particular contagia to particular receptivities of tissue." A conflict of which we may not have any objective evidence of change until the insensibly moving infected cells have acquired sufficient momentum to impress their perverted motion upon the resistant masses—a conflict which results either in death or recovery, in which the cell structure has conquered, but has been varied—adapted, as it were, under the law of survival, to ever after

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as a rule by reason of this conflict—survival and acquired adaptability—to withstand an attack of this same virus. For is it not tenable that by selective action, by immediate adjustment of the physiological forces, by direct adaptation of the variations thus consummated, there must ultimately result a type of tissue whose chemical and physical constitution must enable it to withstand the impact of similar external forces, under ordinary or average conditions? For it must be admitted that the impact of a specific poison upon the organism produces changes, and that these changed conditions produce some, at least, and occasionally considerable, effect upon the organism itself. For the whole organization is so tied together during its growth and development that when slight variations in any one part occur—and these variations are accumulated through natural selection, for, says Darwin, "Natural selection acts by adapting the varying parts of each being to its organic conditions of life, being affected by the direct action of external conditions of life, and subjected in all cases to the laws of growth and variation." This being so, other parts also become modified, and this is correlated variation. In view of this we say, immunity may be correlated with some change in tissue wrought by an attack of a specific disease. For the reason that each variation is produced and maintained by virtue of having some advantage over those with which it has come in competition; or, as Spencer puts it, "By its essential nature the process must everywhere produce greater fitness to the conditions of existence, be they what they may. There is in all cases a progressive adaptation, and a survival of the most adapted, and the evils accompanying are self-eliminated." Briefly to recapitulate:

1. We have a body built up under the laws of selection and physiological variation of specialized cell-tissues, but all originating from the same fundamental morphological unit, immutably mutable by reason of its intrinsic forces, when made to contend with the external forces in the environment.

2. All deviation from physiological processes is disease.

3. That in the specific diseases the agencies causing deviations are external and must be intruded upon the tissues.

4. That when so intruded specific poisons only create conflict with special cell-tissue, and that upon the proportion of such sus-

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ceptible tissue in the organism depends the result—a return to health, or death.

5. The above conclusion, true immunity after an attack of a specific disease, is due to the fact that the preponderance of non-specialized tissue (that is, protoplastic masses not subject to the selective action of special poison) was so great that it was enabled to withstand the impact of infected cells, sustain life during the attack, and to throw off the destroying cells, with a resultant body devoid almost or entirely of cells ever again receptive of the same poison.

DISCUSSION.

Dr. Hibberd.—Mr. President, I desire to express my very great regard for papers of this kind. It seems to me if we are ever to arrive at a scientific understanding of physiological and pathological conditions we must begin at exactly the ground that this paper has taken. We are, after all, a great body of differentiated cells, differentiated protoplasm. One part has one thing, and another part has another thing to do. Every cell performs certain functions which were imposed upon it by the Creator in the beginning of things, and it continues until some stronger force comes into contact with it and predominates. It seems to me if we could keep ten generations thoroughly vaccinated that in that time the liability to smallpox would disappear, and if our distinguished friend Pasteur, in Paris, will be able to suppress hydrophobia until about the year 3000 I think hydrophobia will disappear from the face of the earth. I want to say that the spirit of this paper is the very essence of scientific medicine.

Dr. Rea.—Mr. President, I wish to make one criticism on the papers we have had this morning. They have generally been in the same direction—that is, there is too much theory and not enough practical application. A ten minutes' talk by some man who has made an examination with the microscope is worth a great deal more than a paper which is simply theory, although, of course, we must have theory also.

Dr. Blount.—Mr. President, I can not see for my part, how the microscope will reveal to us the changes that go on in the body, that protect us from these diseases. It occurred to me that there

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was a possibility of protecting the human system by these means of fortification against cells being susceptible to the influences of specific poisons, and I believe it is directly in line with the thought mentioned a while ago in the talk on "Heredity," of fortifying against the tendency to disease that was handed down by the parent.

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CYSTIC DISEASE OF THE TESTICLE.

BY A. A. HAMILTON, M. D., MARION, IND.

Mr. A., the subject of this report, is about thirty-seven years of age, of medium size, rather spare build, but muscular and wiry. His general health has always been exceedingly good, and, so far as he knows, he is without hereditary taint of any kind.

About three years ago while he was one day lifting at some heavy weight—a box or barrel, perhaps—he slipped and strained himself severely, at the same time feeling a peculiar sensation or "twinge," in the cord and testicle of the right side. The pain and uneasiness in the part soon subsided in great measure, and, for a time, at least, he had almost forgotten the occurrence.

Soon after the accident, however, he noticed that his right testicle was swollen or slightly enlarged, and from that time on the organ has slowly but steadily continued to enlarge, until now it has reached such proportions as to cause its unfortunate possessor considerable uneasiness of mind.

The diseased gland is at present somewhat oval, or rather *elliptical* in form, has a *smooth, equal surface,* and measures over 15 inches in circumference around its longest diameter, and more than 12½ inches in circumference at the point of greatest thickness. The enlarged organ almost entirely fills the scrotal sac.

There is *no enlargement of the cord,* nor of the *glands in the groin,* no constitutional symptoms, and *no pain* in the diseased gland—not even when the latter is pretty roughly handled. There is, I am quite confident, some kind of fluid within the gland, as I am positive that I detected *fluctuation* at my last examination.

The normal testicular sensation is *entirely absent,* and, in point of fact, there is very little feeling of any kind present in the en-

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larged organ. *It is not flattened from side to side,* nor has it the *least approach to a kidney shape.* It is quite smooth and even upon the surface, and is tolerably firm and solid on pressure, but is, nevertheless, somewhat elastic. There is no translucency nor other evidence of a hydrocele. Finally, the diseased organ has not at any time seemed really painful, although he is conscious at times of a slight twinge, and a feeling of numbness in the gland itself. Notwithstanding its greatly increased size *the testicle does not trouble him either by being in the way, or by dragging upon the cord,* and it is only annoying because of its unsightly appearance and the feeling of uneasiness naturally suggested by its presence.

There is no well marked evidence of syphilis in this case, nor do I believe that this disease is in any way responsible for the origin or perpetuation of his trouble, although he admits that when a young man he sometimes wandered from the paths of moral rectitude. He claims, however, that he never had anything worse than the gonorrhœa.

It is proper to state, in this connection, that the left testicle is apparently perfectly healthy, of normal size, and in about its usual position, except that it is pushed to one side by the diseased gland.

It is an interesting fact, also, that the wife of the patient (he is married and the father of several children) is in the ninth month of utero-gestation—a condition of affairs probably chargeable to the left gland alone.

For obvious reasons it is important that we arrive at a correct diagnosis in this case as quickly as possible, but as the patient refuses to allow any instrument to be introduced for the purpose of ascertaining the character of the contained fluid (if any there be), and as the parts within the scrotal sac are liable to be affected by several diseases essentially distinct in character, but more or less closely resembling each other in several important particulars, it is not an easy matter always to discriminate with certainty between them.

As the differential diagnosis of the case under consideration is to be determined mainly by the process of *exclusion*—as it is sometimes called—it may be interesting, as well as instructive, to review the several diseases with which this one is liable to be confounded.

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Let us therefore briefly analyze the prominent features of all diseases of this organ in any way resembling the case under consideration, in order that we may, if possible, be prepared to give a positive opinion as to the character of the maladay in the case presented.

And in the first place we might consider scrotal hernia and varicocele as possibly belonging in this category, although a careful study of the symptoms and clinical history of the former as well as the latter disease ought to enable almost any one to avoid the possibility of mistaking either of them for an enlarged testicle. Nevertheless these diseases should always be taken into consideration in making a diagnosis in a difficult case.

A *hernia* always begins above, in the groin, passing from thence downwards into the scrotum. It is irregular in shape, opaque in appearance, and imparts a doughy or gaseous feel to the touch. In reducible hernia the contents of the sac usually disappear, or at any rate can be easily replaced, within the abdomen when the patient lies down, only to descend again as soon as he resumes the erect position.

In this form of hernia a peculiar impulse is imparted to the tumor when the patient coughs or sneezes. Finally the testicle itself can usually be made out at the bottom of the sac.

In *varicocele* the tumor has a peculiar "knotted or knobbed feel," or "a feeling as of a 'bag of worms' within the scrotal sac." This latter sensation is no doubt due to the mass of enlarged and tortuous veins contained within the tumor. The disease is usually found upon the left side, and in persons under thirty years of age. The disease is frequently accompanied by considerable pain.

The enlargement usually has a bluish appearance.

When the patient is recumbent the tumor of varicocele empties itself and goes up, but returns again as soon as he stands erect.

When a scrotal hernia has been reduced, pressure applied to the external abdominal ring prevents a return of the enlargement when the patient again stands up. In varicocele, on the contrary, pressure over the external ring after the sac has been emptied only hastens the renewal of this tumor.

In *hydrocele*—especially vaginal hydrocele—the scrotal tumor is usually transparent, tense, light in weight, and fluctuating. Its sur-

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face is smooth and uniform. The testicle is situated in the lower and back part of the sac, where its presence can often be made out by pressure. The testicular sensation is *usually present on manipulation.* The tumor slowly and gradually increases in bulk, and may, and frequently does, reach a very large size. It is pear-shaped or oval in form and is almost or *quite painless.* The presence of fluid can generally be detected by palpation.

The swelling in this disease usually begins in the lower part of the scrotum. The enlargement is apt to remain permanently, even for years, and when tapped a straw-colored fluid escapes. The cord and inguinal glands are generally free from disease, and the tumor does not have any communication with the abdominal cavity. Both organs are sometimes involved in this malady.

Hæmatocele of the testis may be either spontaneous or traumatic. It may reach the size of a cocoa-nut or even a good sized melon. It may come on slowly and gradually, but usually immediately after a strain or injury. It may occur at any age. When it follows an injury it generally comes on pretty rapidly, and there is usually a sensation at the time as of something giving away. The tumor is generally either pyriform or oval in shape, uniformly smooth, tense and non-transparent, with indistinct fluctuation. It is *at first soft,* but afterwards becomes harder.

The disease may remain stationary for a number of years, but it usually has a tendency, sooner or later, to soften down or to inflame. The testicular sensation is generally present on handling the organ, and the testicle is usually located in the back part of the scrotal sac. When of long standing the tumor ordinarily feels firm and solid upon manipulation. The cord and inguinal glands are usually healthy. A hæmatocele is in reality an effusion of blood into the same parts occupied by the serous fluid of a hydrocele.

In *chronic orchitis* the enlargement comes on very slowly and gradually, and is often attended by little or no pain, even on rough manipulation. Firm pressure frequently fails to excite the peculiar testicular sensation. The enlarged organ is not, as a general thing, pear-shaped or globular, but is flattened from side to side, and although enlarged to three or four times its natural size it still retains the peculiar shape of the testicle. The surface of the tumor is smooth and even, has a firm and solid feel, and is not transparent

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nor fluctuating. The enlargement is usually of slow growth, and generally follows an injury. The cord is sometimes full and tender, and the inguinal glands are free from disease.

In *syphilitic orchitis* the gland is very solid, but not elastic, transparent nor fluctuating. The tumor is generally somewhat oval in shape, but its surface is frequently uneven and covered with lumps or nodular projections. As in simple chronic orchitis so in this—both organs are often affected, either at once or in succession. It is frequently complicated with hydrocele, and is essentially chronic in its nature. It reaches a moderate size, and is painless. The inguinal glands are usually implicated.

In *tubercular disease* both testicles are generally involved. The enlargement consists of tubercular matter deposited in the body of the testis and in the epididymis as well. The surface of the enlarged gland is rough and uneven. The testicle is often partially surrounded by the enlarged epididymis. The disease is often slow in its progress, and after a variable time (perhaps years), the tubercular masses soften and suppurate. The gland is moderate in size, and painless except when inflamed. At first the tubercular matter feels like a foreign body deposited in the gland.

The cord is usually free, but the inguinal glands are involved as a rule.

Cystic or simple tumors of the testicle are painless throughout the whole course of their growth. They are usually of slow growth, have a smooth, even surface, a firm, elastic feel and a more or less globular shape. They may reach a very large size, and are generally almost entirely free from pain, even when roughly handled. The natural sensation of the part is usually absent.

Indistinct fluctuation can generally be detected in the diseased organ, but it is not transparent. The disease is always confined to one testicle, and implicates that gland alone, the cord and inguinal glands remaining healthy. It is rarely the case that a hydrocele exists at the same time.

The disease usually attacks persons between twenty and thirty-five years of age. The general health of the patient may be unusually good, and the tumor may be troublesome only because of its size and appearance.

In cancerous disease of the testicle the organ may develop so

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rapidly as to form a large tumor within a single year. In fact, the disease is nearly always of rapid growth. The natural sensation of the gland soon disappears, and it may be freely handled without pain. The enlargement is more elastic and fluctuating than the cystic variety. It is not translucent, is globular in shape, and is tense and firm to the touch.

When the tumor is large its surface is not smooth and even as in cystic disease, but is usually knobbed or knotty, the projecting parts being softer than the body of the gland.

The enlargement generally commences in the body of the testicle, and sometimes follows an injury, although in many instances the cause can not be ascertained. The cord and veins are usually full and enlarged, and the inguinal glands are nearly always involved. The disease is generally confined to a single testicle.

If, now, we compare the history and symptoms of the case reported with the leading features of the several diseases mentioned in the foregoing epitome, we shall, I think, find that in almost every essential particular, the case presented corresponds with the description of cystic disease of the testicle as given in the above rather hasty resumé.

This, at any rate, is my diagnosis, as long since stated to the patient, and I believe that an exploratory incision would confirm this opinion, but to this the patient will not consent. I have, therefore, been treating him for some months with alteratives, etc., with a slight hope of reducing the enlargement. Finding, however, that the organ continues to enlarge notwithstanding every form of treatment, I have for several weeks advised him to have the diseased gland removed at the earliest possible moment.

JUNE, 1885.

SUPPLEMENT.*

MR. PRESIDENT AND GENTLEMEN: The paper just read in your hearing, as you will no doubt remember, was presented to this Society by the writer at our regular meeting in June, 1885, and with your kind indulgence, I will now give you the sequel of this very interesting case.

From June until November of last year Mr. A. continued to

* Read before the Grant County Medical Society at its meeting in January, 1886.

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take tonics and alteratives at irregular intervals, and to wear a suspensory made by J. Reynders & Co., although he had long since made up his mind to be governed by my advice, and to have the diseased gland extirpated as soon as circumstances should prove favorable.

One day in the latter part of November, 1885, the patient visited me, and stated that he had the day before felt a sharp, shooting pain in the testicle, the first he had ever experienced, and he was therefore anxious to have it out at once. A careful examination convinced me that the cord and glands were still free from disease, and we accordingly determined to operate on the following Monday. On the day appointed, November 23, 1885, with the assistance of Drs. T. C. Kimball, Williams and Seal, I operated as follows:

The parts having been properly shaved, and the patient well under the influence of chloroform, I made a straight incision about seven or eight inches in length, and reaching from opposite the external abdominal ring to the extreme lower end of the tumor. The loose connective tissue uniting the sac to the diseased gland was then torn with the fingers, or cut with the knife, as required, and the enlarged testicle turned out of its covering. These loose adhesions, by the way, were much more extensive than we had expected to find, as the scrotal sac seemed to glide freely over the tumor as if entirely disconnected. A large needle armed with a double thread of heavy carbolized silk was now passed through the center of the cord, and each half tied separately. The enlarged organ was then removed, and the edges of the wound brought together by six or seven interrupted sutures. A piece of lint saturated with carbolized oil was then applied to serve as a dressing.

There was but little hemorrhage during the operation, and the case progressed well until the fourth or fifth day, when slight evidence of sloughing was noticed. The stitches were at once removed, the parts frequently washed and syringed with warm carbolized water, and warm water dressings were applied. Later a yeast poultice was put on and allowed to remain for several hours, after which the sloughing material was removed as far as possible, with scissors, and the wound filled with iodoform. In a few days more the wound was suppurating freely, and there was no further trouble from this source. The wound was, however, freely dusted with

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iodoform at each dressing for a week longer, in order to prevent any possibility of blood poisoning—a danger strongly threatened for several days.

The chief, and, in fact, the only source of suffering in this case was from an entirely unexpected cause, and one, by the way, not mentioned in any of the books as likely to occur in this operation. About the sixth day the patient began to complain of pain and smarting on passing urine, and soon pus was discovered in the urethra. In a day or two thereafter it was found that he could not pass his water at all, and the most violent pain and strangury accompanied each effort. When the soft catheter was passed a collection of blood, pus, and very dark and offensive urine escaped, followed by great pain along the canal. These symptoms continued for a week or ten days, requiring the use of the catheter three or four times each day. During all this time there seemed to be a swelling or obstruction somewhere in the region of the prostate, accompanied by great irritability of the bladder, and strangury. The obstruction almost prevented the onward passage of the catheter, and it was frequently necessary to give large doses of morphia in order to ease pain and overcome spasm and tenesmus. This obstruction, whatever it was, finally disappeared, and was followed by a discharge of matter, after which the catheter was dispensed with—not, however, until the end of the fourth week after the operation. From this time on the patient improved rapidly, and soon resumed his business—weighing more than ever before, and having not the slightest evidence of a return of the difficulty.

Immediately after the tumor was removed it weighed thirty-four ounces, and when, a few weeks later on, an exploring needle was introduced into its substance at several different points, its contents were found to consist of fluid of different degrees of consistency in the several localities examined, thus positively demonstrating the existence of cysts. In one place, for instance, the fluid was thin and straw colored, in another it was thicker but not so deeply colored, and in a third place the exuding fluid very much resembled healthy pus. In still another part of the tumor the contained fluid was of a jelly-like consistency, etc.

Bryant in his work on surgery speaks of cystic disease of the testicle as being "a rare affection," and says: "There is no affec-

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tion of the testicle on the nature of which there has been a greater difference of opinion than cystic disease, and although modern pathologists have devoted considerable attention to its investigation, the subject has not yet been brought out of its obscurity and made plain to the profession." All surgeons agree that excision is the only cure.

MARION, IND., January, 1886.

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MODERN THERAPEUTICS.

L. L. TODD, M. D., INDIANAPOLIS

That the subject of therapeutics in general is receiving more than ordinary attention at this time from the profession, both in Europe and in this country, is evidenced by the unusual space devoted to it in the periodical literature of the day, beside a number of lectures delivered upon the subject by notable teachers in medicine, some of them not especially associated with that department, prominent among which the name of Austin Flint, Sr., appears, in which he urges the claims of therapeutics and pharmacology for greater preferment as a necessary branch of medical education.

The necessity of more thorough investigation in regard to the individual actions of medicines rather than to systems of treatment, with special regard to what one styles the "physiology of diseases," or to the altered functions of unaffected organs during the progress of morbid processes in others, and the importance of investigation is urged regarding these and questions of a similar character.

The field being too broad to attempt even a brief resumé of the whole in a paper of ordinary length, the definition of the term in its extended sense is only claimed that, however rambling or desultory the present effort may be in touching points here and there, it may be done without being chargeable with transcending the limits of the subject.

We accept the definition of therapeutics from one of the best authorities of the day, that "it comprehends whatever is used in the treatment of diseases, not by medicines alone but by all means or appliances," embracing consequently all that is included in the practice of medicine, surgery or obstetrics, representing whatever has

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been attained in these several departments in practical application to the common end. As this is the sum of all, so it might be said to be the most important department of medical education. Considering, however, the fact that its progress is in a measure dependent upon that of other branches, as chemistry, physiology and pathology, one or all of which must precede it at every step, in this light it must be considered in some sense a subordinate department. Covering so wide a field, representing as it does so much in the aggregate, its difficulties and uncertainties bear a like proportion, giving ample ground for the statement that it lags far behind other branches in an approximation to the attainment of scientific verity. More vague and indefinite is its statements of facts, less well defined in its outline of general principles, more fluctuating and unsettled, as constantly disturbed by the waves of scientific progress. As it was in olden times the subject for speculative vagaries and fanciful nonsense, that in the absence of any true knowledge have held so large a place in the theoretic agencies of cure, whether mental or physical, so in modern times it has been the nidus wherein ignorance and imposture have never ceased to spawn their myriad brood, and which, when pursued by investigation and scientific truth, have ever fled to the jungle, like the hare to his cover or the fox to his den, darkness and obscurity being their only safe retreat. And so while it should have appeared among its sister sciences as the true representative of all their real achievements, it has come with its mongrel mass of facts and fancies, of truths so mixed with errors which might be likened to a few grains of wheat lost in such a mass of chaff as hardly worth the separating. And notwithstanding the enlightening agencies of the present it still affords a refuge and a safe retreat for assumption, knavery and ignorance, covering in the ample folds of its uncertainties all that the originators of "isms" or "pathys" may conceive or devise for the sake of misleading the unsuspecting and deluding the simple.

We regard with respectful deference the simple remedies that constituted the pharmacopeia of household medicine of our grand and great grandmothers,many of which remedies were of undoubted value, and their administration in the crude state (in the absence of better methods) did much to alleviate suffering and promote cure. Yet we can not fail to notice in the history of medicine, modes and means

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for which we can find no excuse in reason, and which move us less to feelings of charity than of disgust as we observe how intimately the idea of cure was associated with things of the lowest and most disgusting nature, and how the ancient worthies seem to have labored continually under the delusion that the goddess of health could be appeased by such sacrifices only when men, even lower then beasts, returned to search for means of renewal of life in their own effete products. Yet such has been the record of the past in a large measure, and it need not be considered strange, since history repeats itself, to find a class at the present day claiming to be reformers in medicine, yet clinging to all the effete barbarisms that have disgraced its ignorant practice in olden times, coming with their armamentarium of bugs and worms, poisonous and disgusting insects, with other articles too execrably vile in name for the mouth to utter, much less for the stomach to receive. As though disease could be nauseated from the body by the introduction of substances so disgusting that even corruption and worms would not dwell with them. Others who claim some newly found remedy, some startling discovery whose scope of curative power is broad as human suffering, challenging the multiplied evils of Pandora's Box, and whose representative stands waiting for the suffering multitude to come and be healed, some abortive effort at a crank, who hails from the outskirts of civilization, with nothing to commend him to the notice of the intelligent passer-by save his disregard of the decencies of life, as shown in dress, language and demeanor, claiming to diagnose disease as by prophetic insight, extracting teeth without pain, curing neuralgias and headaches by a simple touch or wave of his hand, rheumatisms, coughs, colds or consumption as by magic, all in the interest of suffering humanity, though the five dollars per bottle is never omitted, with the admonition to keep clear of the doctor. Yet these and all others of their kind are never wanting for crowds of auditors, with ears open to receive their sophistry and nonsense, and gaping mouths to swallow their sewage. Others, who, scorning to mingle with the plebeian throng, with intelligence superficial as their sugar-coated gentility, listen with as much credulity in private to the vagaries of pretenders, and swallow with as implicit confidence the ultimate triturations of fox-liver, or frog-spittle, or juices of bugs most vile, as their brethren of the street.

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All this, which is fact, not fancy, strange to say, occurring in a land that boasts of the perfect organization of its common school system, and in this city with aspiration to a high degree of culture, where the gospel of truth is proclaimed every seventh day in more than a score of churches, and the story of a hell for all liars is far more than "a twice told tale."

Then the class of remedial agents known as proprietary medicines, many of which though formulated by men of knowledge and skill, like ready made clothes, they are exceptionally of good material, and further resemble the same in seldom fitting the wearer or victim, are frequently the basest compounds made from the trash and refuse material of large drug houses, the deficit in medicinal strength being made up by the addition of dirt and filth incident to the mode of manufacture; serving the purpose, too, of rendering the character of the compound less easily recognized. Used as they are indiscriminately, with no knowledge of their ingredients, the effects they produce, or the incompatibilities they compass; without direction save through the cheap almanac or yellow cover—how could they do otherwise than engender more diseases, ten fold, than they ever prevent or cure, for who ever knew a man or woman that became addicted to their use who was not a walking hospital for the rest of life.

Another class still of somewhat different order, claiming a kind of semi-officinal character, with their terminal syllable hinting strongly of a legitimate origin, that frequently come along with a pamphlet, or sometimes a well bound volume, ostensibly addressed to physicians, though really intended for the laity. A collection of a half-dozen or more of these specimens presents a strange mass of confusion as to medicines, organs, functions and diseases. As examples, a few looking in glaring letters out from highly colored paper have most impressed themselves upon our vision, as "Iodia," "Caulocorea," "Tongaline," "Listerine," "Nephriline," "Asthmaticine," "Morrholine," "Dyspepsyn," "Alteris Cordial," and that double dealing agent of death and debauchery bearing the misnomer "Benedictine." These, all of them, to say the least, are doubtful compounds, unknown as to strength or medicinal virtue, and in no wise to be preferred to proprietary medicines. And the question naturally arises how can an intelligent and conscientious physician consent to such reckless experimentation (as is involved in pre-

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scribing such agents) upon those who confide their lives or health to his keeping. And with so much we gladly pass the subject of spurious therapeutics, feeling to an extent contaminated by so much of the touch, still recognizing the fact that there are many loathsome matters connected with medicine necessary to be handled.

Fortunately there is another side to the picture, one which presents the subject in a more favorable light; and a little consideration in comparing the present status of therapeutics with that of a comparatively recent period, will show that within the legitimate scope of medicine much that is of substantial value has been achieved that, barring all its errors of teaching and deficiencies in knowledge, it is still very far from being purely speculative, as many truths and principles within its domain are as well established as any others in physic, although its principles have in a large measure been deduced from a confused mass of facts, a large proportion of which are purely empirical, learned through the slow process of experimentation, and not susceptible of rational explanation. These, too, made by a remnant of those engaged in the administration of medicines, whilst the large majority, comprising many active workers and careful observers, are never heard from.

The unsuccessful efforts of authors and teachers to devise a system or classification of articles which would be accepted for more than a brief period is amply illustrated by the comparison of present day publications with those of a few years back, whilst it teaches us the truth that as a science it has been moving on, each year calling for revisions and emendations to discard the obsolete and to include new remedies brought to light in the current progress of scientific discovery, the subdivision of others by modern chemistry into various subordinate principles, each differing in its action from all the others as from the original article. Then the constant demand for agents corresponding with new revelations in pathology, all of which render the changes to which it is subject, unavoidable.

There are other difficulties to be met, among which may be noticed the widely differing views of teachers and book makers as to the general or special actions of medicines in the treatment of certain diseases, not only of those recently brought into use, but old, some of them, as the science of medicine. Then the variable quality of drugs, the numerous preparations or compounds often

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neutralizing or incompatible, therapeutically if not chemically, and the employment of the same in the treatment of diseases whose type is ever varying, besides being subject to all the modifications of stage, temperament, age, climatic influence, and general surroundings, as well as intercurrent affections, so frequently intruding during the several stages of well-known diseases, complicating their pathology and treatment, all of which combine to render the adaptation of remedial agents to the treatment of diseases an exceedingly difficult problem, one, indeed, not infrequently too complicated for our solution.

As a science pathology is to-day far in advance of therapeutics, although the latter should be properly the objective of the former. And this is not strange considering the fact that most of the leading forms of disease are well defined, outlined by certain symptoms that accompany their different stages, telling of structural changes whose existence is easily verified after death; showing their invariable progress to the termination as well as the inefficacy of the means employed to alter or check their course, the latter having left no record of their effects. And so the large majority of active workers have very naturally chosen to expend their energies in that field which promised more definite results, as a consequence more than a due proportion of effort has been bestowed in the investigation of morbid processes rather than upon the means of relief; and whilst not seeking to depreciate the importance of the one, or to magnify unduly the other, acknowledging the necessity for a division of labor which is necessary to success in all departments, still it may be said in a conservative way that exclusive adherence to the specialist in pathology necessarily brings the two-fold conclusion, viz., a certain degree of definiteness in regard to the progress and termination of diseases with a corresponding doubt or disbelief in the efficacy of all medication. Granting the fact that a number of diseases can not be cut short, but pursue a certain course peculiar to each, as smallpox, pneumonia, or typhoid fever, yet the same are in a large degree amenable to remedial measures which tend to modify their course, lessen their violence, and not infrequently, as we may reasonably judge, change the ultimate results. Indeed, we can scarcely name one in the long list, not excepting tetanus, hydrophobia or cancer, where beneficial effects may not

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reasonably be looked for from the timely application of remedies. And the fact that many diseases in their progress pass to a stage where remedial effort is unavailing is no argument against their timely use, an undoubted illustration of which is frequently witnessed in the cure of some pulmonary affection whose uninterrupted course would have speedily ended in dissolution. How many thousands have gone prematurely to the grave through too implicit a belief in the older and more conservative teachings regarding the possible curability of pulmonary consumption, or from malignant diseases by withholding the knife or caustic beyond the period when, as modern surgery teaches, the affection was purely local. How many a poor dyspeptic in olden times has dragged out a miserable existence who at the present day would be sent on his way rejoicing, "to eat and to drink, and enjoy his portion under the sun." Who can compute the number of years of usefulness and happiness added to the life of woman by the medical and surgical treatment of modern times?

While it would seem unnecessary to offer such facts in a plea for our calling, there are many persons at the present day with average mental endowments, and who exhibit a fair degree of intelligence in other matters, who have but little faith in the efficacy of medicine, and who even more readily will give their assent to the asserted potency of blue glass or moonshine than to the best established truths of medical science, exhibiting a strange mixture of faith and incredulity, as the one who is said to have listened with perfect confidence to the marine's story of one of Pharaoh's chariot wheels being brought up on the fluke of an anchor in the Red Sea, though she scorned to be imposed upon by stories of flying fish.

Noticing some of the progressive changes that have taken place within a few years, a most important one is to be seen in the classification of medicines, comparing two standard works of their times, that of George B. Wood and Roberts Bartholow. The one with its complex table of numerous headings and subdivisions, the other with its simple scheme which, after giving the modes of introduction of medicines into the system, and the application of topical remedies, limits the remainder to the constructive and destructive metamorphosis—the prevention of "septic decomposition" reme-

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dies used to modify the action of the nervous system, and those to cause "evacuations from the body," which change has been productive of no little advantage to teacher and student. The specific action of articles upon special organs while not disproven or denied, has rather given place to the more extended influence upon functions or correlated functions of the various organs as a better knowledge of these has been attained. The introduction of numerous articles; a better understanding of others long in use, whose operations have been misinterpreted or wholly misunderstood, and which have been changed in classification or assigned to wider fields of duty; the demonstration of a more intimate relation between food and medicine as regards the class of medicinal substances which promote constructive change with common aliments; the obliteration in a great measure of the distinction formerly made between medical and surgical therapeutics; the use of essential principles of drugs in alkaloids, and concentrated extracts as chemistry has provided them; hypodermic medication, of such inestimable value in some diseases, whereby the effects of medicines may be obtained with certainty and rapidity, and with but little inconvenience to the patient; rectal alimentation, so available a means of sustaining strength during suspended action of the stomach; antiseptic methods, the natural outgrowth of the development of the germ theory, which, including the more strict attention to minute details, as to neatness and cleanliness, has added so largely to the success of modern surgery; increased resources in articles necessary to control disorders of the nervous system; a more intelligent use of means to supply the wants of the system in diseases involving failures in the processes of nutrition and assimilation, which cover so wide a scope since the teachings of physiology have afforded a better knowledge of the different stages of digestion, with the several ferments necessary to different classes of articles taken as food, and which comes in appropriately as a positive counterpart to the expectant or conservative teaching of a few years back as to active medication, or the use of drugs alone; the abandonment for the most part of the indiscriminate medication of the past, with the complicated mixtures too often involving incompatibles, given without knowledge of their effects, or intelligent design; the resulting confusion so productive a source of mischief, instead of which it has become a generally ac-

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cepted doctrine that the more experienced and skillful the physician the fewer and simpler will be his means of medication; all of which modifications are of recent date.

In addition we have the discovery or development of a number of new remedies, many of which have passed the necessary time for the test of experience to be applied, and promise to retain their places as lasting acquisitions to therapeutic science, among which may be mentioned chloral hydrate, carbolic acid, iodoform, the bromides of potassium and sodium, the salts of lithium, jaborandi, with its two widely differing essential principles, cocaine, jauarana, wahoo, ingluvin, salicylic acid, pepsins, pancreatin, peptonized preparations, malt, cosmoline, the oleates, plastic dressings and various appliances too tedious to mention, besides others yet to hear from as to their ultimate value. In regard to older remedies recent experience and research has developed much that is valuable, examples of which are witnessed by present uses of aconite, quinine, and salicylic acid as as antipyretics. Again there is an entire change of view as to the influence of digitalis in cardiac affections, which subject alone is worthy of an entire paper, or an evening's discussion. Then the division of the more complex articles, opium, for instance, into a number of principles, each widely differing from the rest in its action, has relieved the practitioner from troublesome hindrances in its employment, thereby widening its range of usefulness.

The separation of the active principle from a number of crude drugs, as physostigma, digitaline, pilocarpine, atropia or apomorphia, enabling prompt and powerful effects when required in the emergencies of disease. These are a part of the achievements of modern therapeutics, aided by such means as the fever thermometer, chemical analysis, and a more familiar use of the microscope.

Of the antagonisms of medicines our knowledge is quite limited and till of late the antidotal powers of drugs were limited to their chemical relations, affinities or non-affinities, as acids or alkalis, tannin, albumen, etc., but since a knowledge of the antagonism in the system of certain leading drugs has become established much benefit has resulted, not only in counteracting the effects of poisons, but of meeting successfully the more violent forms of diseases, as is well illustrated by recent researches as to the antagonisms of morphia and atropia, belladonna and calabar bean, digitalis and aconite

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—aconite and atropia, jaborandi and belladonna, or the active principles, pilocarpine and atropia, which is suggestive of another point in this subject worthy of notice, namely, the contraindication of some medicines in the treatment of certain affections, not only as applied to contraindications created by diseases but to those dependent upon temperament, or bias of organization, age, etc. This subject has received comparatively but little attention, and this is not strange, as many of the facts concerning the physiological action of drugs have been learned by experiments upon healthy bodies; yet as the presence of disease in one organ changes the actions in others, and gives an altered physiology, the programme, so to speak, becomes changed at once. This is a field where only observations afforded by long experience at the bedside can be of much value, and any information from such source should not be underestimated, though the field of observation has not been an extended one, as the well being of the patient often depends equally as much upon what is not given as what is. Unfortunately diseases rarely come to our hands uncomplicated, and frequently by supervening conditions which very seriously embarrass treatment, inasmuch as the remedies employed for the original prove utterly incompatible with the intercurrent disorder, as illustrated in diabetes, where the enforcement of dietetic rules are so indispensible, excluding sugar and fats and starchy food, rapidly starves the patient into phthisis, to which, as all know, he generally falls a prey. The contra-indications as to the uses of medicines employed in daily practice can not be too much regarded, a fact specially to be observed in the treatment of infantile affections, in which the disease is so frequently, either primarily or secondarily, in the mucous membrane of the alimentary canal, or its common point of reflexion—the brain, and so, for the most part, excludes all but the most non-irritating class of substances, as active cathartics, irritating astringents, excitants of the nerves, or the preparations of opium which determine a more active circulation of the blood to the brain, and should be prescribed only with due caution. We rarely see in books any caution given as to the use of iron, mineral acids, or phosphorous in inflammation of mucous membranes, or the parenchyma of important organs, as the lungs, liver, brain or kidneys, or the injurious effects of nitrate of potash in the presence of an irritated bowel or sensitive kidney, or any re-

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minder of the care necessary in the selection of remedies for the common diseases of the tonsils and pharynx, recognizing the fact that such agents as chlorate of potash, tincture of iron and nitrate of silver are valuable with flabby tongues and pale mucous membranes, covered with creamy exudation; whilst with red tongues, highly colored mucous membranes, and glassy or roughened pharyngeal surfaces, showing active follicular inflammation, that the same agents will always prove mischievous. The danger of using aconite, gelsemium or veratrum, even in small portions, in all conditions accompanied by a weakened heart; the effect of quinine as an irritant to the intestinal canal, and when administered in full doses and long persisted in, as in our typho-malaria fevers, conducing to intestinal hemorrhage; the use of mercury in degenerative conditions of the system when not of specific origin—its danger, especially in such conditions of the kidney, being more generally recognized by the authorities, though it can not be too much emphasized.

The too frequent or prolonged use of bromides in enfeebled states of the brain and nervous system, and the special danger from the use of chloral hydrate in the same condition. The exhibition of phosphorous in spermatorhea or any disease of the genital organs, where irritation is the accompaniment of weakness. The avoidance of all remedies that check secretion or hinder the discharge in bronchial affections, especially of the extremely old or young. The uselessness and mischievious influence of repeated emetics in membranous exudations of the larynx and trachea, especially injurious if depressing articles, as antimony or lobelia, etc., are employed.

As regards the contraindications as presented by temperament: The use of opium in any of its common forms on persons of well-marked nervous temperament, especially of morphine with females, in whom spinal derangements are so common, an accompaniment of other painful affections, where its after affects from vital depression and stomach derangement, often leave the case but little benefited by medication. The use of belladonna in states of low vitality, especially in persons of nervo-lymphatic temperament, the toleration for the drug seeming to be in like proportion to the degree of vital force.

These examples might be extended if the time permitted. It is sufficient to say, however, they are such as seem correct, mostly from

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individual observation, and are therefore offered more in a suggestive than in a didactic way. Doubtless there is in the common therapeutic agent a breadth and scope of action which the casual observer of its effects falls far short of appreciating, or of enabling the experimenter to obtain the full benefits that follow its intelligent employment. What we want is a more intimate knowledge of the various effects of drugs, even to indirect or secondary, and beyond those by which they are ordinarily recognized. This, with a correspondingly intimate knowledge of pathology, will enable us to employ medicinal agents with some approach, as Prof. Frazer says, "to that same certainty and delicate accuracy that characterizes the operations of the civil engineer."

Not forgetting the obligations we are under to the honest, intelligent pharmacist, such an indispensible aid to the physician, who eschews ready-made articles, adulterations or substitutes, but fills prescriptions per order, from fresh and reliable material; whose stock consists not as the apothecary of ancient times in "Stuffed alligator skins, of ill-shaped fishes, a beggarly account of empty boxes, green earthen jars, bladders and musty seeds," not inviting to the curious eye of the entomologist by the array of skeletons of long extinct bugs and insects, but a well assorted class of preparations, whether of ointments, extracts or tinctures, made from reliable material, each article of which has been assayed for the quantity it contains of the essential principle, always to be commended the more if they are of his own manufacture. Let us have such, and let prescriptions be made accordingly, adapting them as nearly to the wants of the patient at that time as a careful examination and reasonable skill will enable, and with a faithful administration of the same, the results will be far more satisfactory, we shall have made some real approximation to a true knowledge of the actions of medicines and much of the doubt and uncertainty now so great a barrier to the successful progress of therapeutics, will have been removed.

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LOCOMOTOR ATAXIA.

BY JAMES S. GREGG, M. D., FORT WAYNE, IND.

I read a paper before this Society at its last meeting entitled, "A Case of Locomotor Ataxia," in which I indicated the importance of an early diagnosis, and in this, in addition to a summary of its etiology, pathology and therapeutics, will endeavor to present more prominently the most important symptoms necessary for its recognition in its first stage.

Since writing that paper I have read with much interest one of the latest works on the subject in the English language, by Julius Althaus, of London, entitled "Sclerosis of the Spinal Cord," published in 1885. From it I have gleaned much valuable information, especially in regard to the pathology, symptoms and therapeutics of the disease, besides having had some experience in other cases of this affection, which is said to be one of the most frequent of the spinal cord.

ETIOLOGY.

As a predisposing cause, neuropathic tendency, as found in many families and individuals, probably exercises a strong influence, and while it is not generally believed to be directly transmissible by heredity, still it is thought that parents sometimes transmit to their children a predisposition thereto. It occurs more frequently in males than females, the ratio being about five to one. It is a disease of adult life, much the greater number of cases occurring between the ages of twenty-five and fifty years.

Occupation such as exposes one to unusual cold and wet, long residence in cold, damp, situations, insufficient or unwholesome food, etc., are supposed to produce some degree of predisposition in some cases.

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Sexual excesses are considered by many authorities to be a predisposing cause, inasmuch as they lower the general tone of the system, and debilitate the spinal cord in particular; but Bramwell, in his "Diseases of the Spinal Cord," page 79, says: "But the evidence is, I think, as yet inconclusive that any organic spinal affection is caused by it." Dr. Hammond also thinks it a less frequent cause than is generally supposed. Erb says: "Formerly these were regarded as the principal and almost the only cause of tabes, and every poor victim of the disease lay under the suspicion of having led a dissolute life. This was certainly wrong; it is but a limited number of cases that are unquestionably caused in this way." Althaus says: "I have not seen a single case in which venereal excesses alone could be looked upon as the cause."

Syphilis was for a long time regarded one of the frequent causes of the affection, but more recent investigators, with the exception of Althaus, are generally of the opinion that it is much less frequently so than was formerly supposed; and Bramwell says: "The question as to syphilis being *the* cause of locomotor ataxia is still under discussion. There is one form of proof which would, I think, be conclusive, should it be forthcoming. Women, in this country, [Great Britain] at least, seldom suffer from locomotor ataxia. Now, if syphilis is *the* cause of the affection prostitutes, who are so often syphilitic, ought to be affected with locomotor ataxia much more frequently than the general mass of the population. Unless this fact is forthcoming we can not allow that syphilis is the sole cause, but must admit that there is some other condition in addition to the syphilis which renders males more liable to the affection (locomotor ataxia) than females." Hammond is of the opinion that syphilis is the cause "in probably one-twentieth of the cases."

Althaus, on the contrary, believes that much the larger majority of cases are caused by syphilis; but Leyden states that the theory of syphilitic infection being the principal cause is wrong, because it is based upon statistics only, and that statistics may prove anything. Westphal, whose opinion is entitled to the highest respect, has likewise been from the beginning a consistent opponent of this theory. He has no faith in statistics, as he finds it impossible to rely upon the statements of patients. Some of the latter consider every sore on the sexual organs to be venereal; and even surgeons are in the

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habit of treating any abrasion on these parts as syphilis in order to be on the safe side.

While the excessive use of alcholic liquors is regarded by Hammond and others as being a much more frequent cause of locomotor ataxia, Erb, Clark, Bramwell and others make no mention of it, though the latter author says: "It would appear to be an occasional cause of paraplegia." Althaus says that its influence does not seem to be great.

Physical and mental over exertion; previous acute and chronic diseases; extreme and lively emotional activity; traumatic injuries, such as blows on the spine; fractures, shocks; etc., are regarded as exciting causes; in fact, in the language of Bramwell, "Anything which exhausts the functional activity of the nerve tubes composing the posterior external columns, in persons predisposed to the affection, will probably act as an exciting cause of the condition." But most authors, especially Erb, Leonhardt and others consider "taking cold" as the most frequent, in fact, as the almost exclusive cause of tabes.

Althaus (page 90), says: "Nobody doubts that the influence of cold may produce tabes." He further says (page 101): "The influence of exposure to cold is no doubt to a great extent instrumental in causing the numerous cases of tabes which occur after campaigns," and he proceeds to relate a number of European military campaigns of an unusually severe character, after which numerous cases of tabes occurred among the soldiers engaged in them, as also after the French campaign in Mexico under Maximilian.

After this synopsis of the principal causes of the disease, it will not be irrelevant to quote the language of Erb, in which he says: "Over against all these statements, however, it must also be emphatically declared that, in no inconsiderable number of cases of tabes the most careful investigation is able to show no cause whatever for the disease."

SYMPTOMS.

The most of the symptoms of a typical case of this disease have been referred to during the report of my case in the former paper, yet there are complicated ones, presenting various other symptoms. I desire, however, now to call special attention to the earlier and more obscure ones of the first stage.

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For convenience of description the disease is divided into three periods or stages, the first being the preataxic or pro-dromal, the second the ataxic, and the third the paralytic or terminal stage. Bearing in mind the great importance of being able to make an early diagnosis, I will ask especial attention to the more prominent symptoms of the first stage.

1. The most important symptom in this respect, and one which is probably developed in all cases before ataxy is observable, is the abolition of the patellar tendon reflex, or knee jerk (Westphal's symptom).

2. The peculiar lightning, stabbing or electrical pains.

3. The reflectory rigidity of the pupil (Argyll-Robertson's symptom).

The first is diagnostically the most important, as it is pathognomonic, and one of the first to be developed; yet without the presence of others that would tend to excite apprehension, the general practitioner not familiar with the affection would seldom be led to make the necessary test, (of tapping or gently striking the ligamentum patellæ while the knee is flexed and leg suspended.

The second is usually first experienced in various parts of the lower extremities, sometimes shooting like a severe shock of electricity along the sciatic or other large nerve branches; but the pains are most frequently quite circumscribed, and may be located in the skin, tendons, muscles, periosteum, etc.; and vary somewhat in character, according to the nature of the tissues in which they are felt. Instead of being of a fulgurating or lightning character, they may be terebrating or boring, or stabbing, each shock or stab being but momentary, yet repeated in rapid succession several times, then ceasing for several seconds or a few minutes, to be repeated; thus recurring in paroxysms lasting a few or many hours, or for a day or two, when they may suddenly or gradually subside. These pains at the beginning of their appearance are often very slight and trifling, and may not excite much apprehension, but as the case progresses they often become most excruciating.

The third, or reflectory rigidity of the pupil, called, also, the Argyll-Robertson symptom, is a "bilateral myosis or rigid contraction of the pupils, with a loss of reflex action to the influence of light, but with preserved voluntary contraction during accommo-

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dation." Argyll-Robertson found this symptom in about 46.6 per cent. of his cases. With regard to the different stages he found that in the initial stage the pupils were frequently enlarged (mydriatic), and in the second stage generally myotic, with no response to light, but voluntary accommodation still retained to some extent; and in the third and last stage the pupils are generally dilated or normal, and completely motionless.

The three symptoms above described are never found together in any other disease than tabes dorsalis, and when they exist together render the diagnosis certain, even before any ataxic symptoms are observable. But in many cases the second and third symptoms are not found in the first stage, and we generally fail to suspect the existence of the malady until we observe other symptoms peculiar to it before we are led to test for the only, probably never absent symptom, in the first stage—the absence of the patellar tendon reflex.

Among other symptoms which may exist in this stage are paralysis of the ciliary muscle; paresis or paralysis of various of the ocular muscles, causing various forms of strabismus; diplopia; etc., (disappearing, perhaps, in a short time, and recurring at varying intervals); ptosis; partial or complete immobility of the eye-balls; perversions of the senses of smell and taste; amblyopia; amaurosis; partial color blindness; impairment of hearing; tinnitus aurium; partial or complete loss of sexual power, slight paresis of the bladder; slight attacks of vertigo; etc. Any of these and other symptoms may exist in the early stage, with the absence of the lightning pains and the Argyll-Robertson symptom, which, especially the presence of any of the ocular symptoms, should lead the practitioner to test for the absence of the knee jerk.

Various other symptoms called *crises*, in various internal organs, may exist in this stage, such as gastric crises (pain in the stomach, with nausea and vomiting); vesical, rectal, intestinal, pharyngeal, laryngeal, œsophageal crises may occur; and others to which I can now only allude.

Anæsthesias and paræsthesias of the integument often begin at an early period, especially in extremities (the plantar surfaces of the toes and feet usually being the first thus affected), and gradually extending towards the body. In the upper extremities the parts

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supplied by the ulnar nerves are usually those first affected. Various other symptoms which sometimes occur in the early stage might be mentioned, but those already given will be sufficient to induce one who may become interested in the subject to pursue it further.

In the second or ataxic stage, ataxy ("want of order") or incoordination of muscular power, is the most characteristic symptom. It usually developes very slowly, and it is difficult, often, to determine when it does begin, for unless a diagnosis has been made in the pre-ataxic stage, it may be mistaken for temporary debility, which the patient may expect to subside, but which, he afterward finds, continues to increase until the peculiar "ataxic gait" is fully developed.

The principal tests for this in its initial stage are, requiring the patient to rise quickly from a couch or low seat; to request him to stand on one foot; to raise himself on his toes; to stop quickly and stand still, after walking as fast as convenient; to turn quickly around while standing; to walk backward; to stand with his feet close together; or walk or stand with his eyes closed, or in a dark room. The patient if tabid performs part or all of these movements more or less awkwardly and with difficulty; and, with his eyes closed, he manœuvers with his arms to keep his equilibrium; and it has been said that he "stammers with his feet and uses his eyes as crutches."

In this stage sensibility becomes more impaired; numbness, paræsthesia, anæsthesia and analgesia become more or less developed; loss of sensation of heat; dysuria; incontinence of urine, etc., occur in many cases.

During the *third*, or last stage, the above symptoms generally become aggravated; and others, dependent upon the extension of the disease to the columns of Goll, the gray matter, the lateral and anterior columns and the multipolar cells, causing symptoms belonging to cases of paralysis and trophic degeneration, usually supervene; and the patient dies a slow and terrible death unless some intercurrent disease comes to his relief and ends the scene more quickly.

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PATHOLOGY AND DIAGNOSIS.

It is a pretty well established fact that typical cases of locomotor ataxia are dependent upon sclerosis, or gray degeneration of the posterior-external (Burdach's) columns, or posterior root-zones of the spinal cord, the result of chronic inflammation; although a few pathologists, including Leyden, deny its inflammatory character, believing it to be owing to a peculiar chronic degeneration of the nerve tracts without any especial participation on the part of the connective tissue, and without inflammatory manifestations.

In typical cases the disease originates in the *lumbar* portion of the cord, and consequently its first manifestations are observed in the lower extremities, such as paræsthesia, lightning pains, weakness, girdling sensations, inco-ordination of muscular action, etc.; and also in paresis of the bladder. But the *loss of the patellar tendon reflex* is the most important sign in a diagnostic sense.

In a portion of cases it is probable that intracranial lesions are the first morbid processes. Hammond says, "Indeed there is reason to think they are often the starting-point of the disease. They have been carefully studied by many observers, and the fact that the most striking of them—that of the optic nerve—can be observed with the ophthalmoscope, gives additional interest to the subject." The changes thus found have been carefully studied by Leber, Wecker and Jaeger. The conditions found by them were a "particular appearance of the papilla;" a "narrowing of the visual field;" "gray degeneration, with more or less complete absence of atrophic excavation." According to Wecker and Jaeger, the opthalmic appearances in cases of gray degeneration are sufficiently characteristic to enable the diagnosis of locomotor ataxia to be made with certainty from them alone. While this is probably too positive a statement, it is safe to conclude that when they are co-existent with impairment of the perception of colors, we have pretty positive indications of the existence of locomotor ataxia, especially if the pupils be contracted, and lightning pains be present.

There are in some cases affections of the joints of the extremities, especially of the larger ones, but this more frequently occurs in the more advanced stages.

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PROGNOSIS AND THERAPEUTICS.

The proportion of cases that have been cured by any treatment, is, unfortunately, very small. It is emphatically a *chronic* disease, seldom proving fatal under five years, and not unfrequently continuing for twenty or thirty years, unless death result from some intercurrent disease, frequently dependent more or less, upon the one under consideration. Althaus mentions one case that lived thirty-seven years from its inception. There is not unfrequently, temporary arrest of progress, and even improvement, effected; but complete cures rarely; and when they have resulted from treatment, this has generally been commenced at an early stage, probably before any material organic changes in the cord had occurred.

As I regard it of more importance for the general practitioner to be able to recognize the disease in its early stage, than to become expert in its treatment, I will give but a synopsis of the measures usually pursued by the best specialists in diseases of the nervous system, whose assistance should be early invoked.

In all cases with even a strong suspicion of a syphilitic origin, a thorough and persistent specific course should be promptly adopted, consisting of mercury internally, or by inunction, (for which the oleate is probably best), with potassium iodide. Whether benefit follows this or not, *ergot*, especially early in the disease, is considered one of the most valuable remedies, which may be given in half drachm to drachm doses of the fluid extract, or its equivalent, three or four times daily. For the relief of pain, whether electrical, or caused by the various crises, codeia, or, if necessary, the hypodermic injection of morphia, may be used. I have myself found more relief from the lightning pains by the use of quinine than opiates. Strychnia in this affection, is not usually favorably regarded, and may be harmful.

If no improvement follow the use of ergot, *nitrate of silver* in $\frac{1}{8}$ to $\frac{1}{2}$ grain doses, three times daily, has the best endorsement. Its use should be occasionally intermitted, and effects watched, to prevent "staining."

In conjunction with any other treatment, *electricity*, in both the galvanic and faradic currents, should be used, but by skillful hands

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in order to prevent injury, which is liable to result, if used injudiciously.

In using the nitrate of silver great care should be taken to prevent its becoming inert. Althaus emphasizes the fact that all organic substances reduce it, whether in substance or solution; and that the pills so frequently made with liquorice, taraxacum, crumbs of bread, etc., are practically inert, and recommends that they be made with argilla (silicate alumina) as an excipient.

The rule of limitation will not permit me to proceed further at present, but I hope this *resumé* will induce those interested to elaborate the subject as I would like, but it is too vast for exhaustion in a paper before this Society.

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TUMOR OF THE BRAIN.*

BY A. HENLEY, M. D., FAIRMOUNT, IND.

M. J. S., is a female, *aet.* 14, small and delicate of her age, showing marked evidence of a system not well nourished; fair skin, light hair, blue eyes, head large.

During her infancy and childhood up to the age of six years, she enjoyed fair health. When near the latter period she had an attack of pain in the left frontal, and pain and tenderness in the left temporal regions, with some discoloration of the skin, and the parents thought there was some bulging of the temporal fossa, which at the time was thought to be the result of nasal catarrh, and seemingly passed away for a time, and might have been forgotten had not subsequent history called it up.

At the age of seven she had a severe attack of idiopathic peritonitis, and for a time her life was despaired of, but from which she recovered after a tedious convalescence. But from this time on until the day of her death she complained more or less every day of pains in her head, which at times were of a lancinating character, but at no time was she entirely free from pain.

Two years ago she had an attack of what at first simulated cerebritis, the febrile stage lasting only a few days, but she continued to suffer with paroxysms of pain of the most intense character, and was confined to her bed for over two months.

The latter part of 1884 she had two other similar attacks, but of shorter duration, but each attack seemed to be followed by a more sensitive condition of the brain. Her hearing was very acute, could hear the tick of a watch ten to twelve feet, and could feel the pulsations on the drum of the ear; and for two years or more she

* Read before the Grant County Medical Society.

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would say to her playmates when at play, "Now, don't touch my head, you will hurt me, it is sore."

At no time was there any impairment of the special senses or speech. Later there was some disturbance of locomotion. In getting up to walk she was frequently noticed to balance herself with arms extended, and had a staggering gait. Last October at the commencement of our public school she was feeling pretty well for her, and was anxious to go to school, and did go for a few days, and had good memory and learned fast, but the pain in her head was so much aggravated by study that she gave up school.

During her last sickness, which was of two weeks duration, and terminated November 19, 1885, her suffering was intense at times, and generally worse at night, and attended by nausea and vomiting. Her temperature was not elevated at any time I saw her, neither was the pulse much accelerated, but full and strong until near the close. She retained her mind, sight and speech until the last. For twenty-four hours before death she was inclined to lie on her left side, with her face downwards. The last few days her urine was scant and clouded; bowels not hard to move. She died during a paroxysm of suffering, seemingly from a lack of inervation.

Her paternal great grandfather died at an advanced age, having suffered with much the same train of symptoms. Her paternal grandmother on the same line of descent, had a tumor of some character removed from the upper dorsal region of the spine.

Post mortem appearance twelve hours after death: The scalp was removed by the usual incision and presented nothing abnormal, being pale and almost free from blood. The calvaria being removed, it was found to be very thin, from the thickness of card board to 1-16 of an inch, it being impossible to make out the two plates. The membranes of the brain were of a pale color; showing no sign of acute inflammation. The blood vessels, longitudinal sinus, were moderately filled with dark fluid blood. There was unusual fluctuation in the brain, and on removal it was found to contain a quantity of fluid serum—six or eight ounces. Weight of brain forty-eight ounces.

The membranes being removed, the convolutions were found agglutinated, it being impossible to separate them, the brain sub-

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stance giving away first. The brain substance was very friable; the corpus callosum soft and easily broken down by the finger. The lateral ventricle of the left hemisphere was now opened by a horizontal incision, and found filled and distended by a tumor of hard, jelly consistence, with one arm extending backwards into the posterior cornu, and one downward into the third ventricle. The ganglia, usually found on the floor of the ventricle, (optic thalamus, corpus striatum) seemed to be obliterated in this instance. The choroid plexus was also absent in this ventricle. The right lateral ventricle was normal, being free from tumor, and the ganglia intact.

The tumor weighed three and one-half ounces, and had a reddish, flesh-like appearance, firm and rather nodular to the touch. The microscope showed many round, nucleated cells, with some large caudated cells, with connective stroma and granular matter.

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ETIOLOGY AND TREATMENT OF ACUTE CROUPOUS, OR LOBAR PNEUMONIA.

O. N. HUFF, M. D., FOUNTAIN CITY, IND.

Probably no disease with which the medical profession has had to deal is so common to all climates, all countries and all people as pneumonia. From Quito around the globe again to Quito, or from pole to pole, it would be a long search to find a country which has not in some degree suffered from its ravages. Older than our profession, it has been a source of constant study and research through all the centuries, yet there are very many things connected with its *etiology, pathology and treatment,* still unsolved.

Pneumonia denotes inflammation of the lungs, but the term is so indefinite, or rather comprehends so much, that it will be necessary to define ourselves before we can proceed intelligently. We shall not attempt in this brief paper to cover the whole ground and give the different kinds or classes of *pneumonias,* and enter into a discussion of the details of the numerous heads, but shall confine ourselves chiefly to the etiology and treatment of *acute croupous, or lobar pneumonia.*

It was not until the time of *Laennec* that an accurate distinction was made between *pneumonia* and *pleurisy,* and to him more than any other is due that distinguished honor. Previous to that time they were classed together. But it is of still more recent date the *croupous* variety has been accurately separated from the other forms of pneumonia.

It was formerly classed as a local disease, but many are now advocating the theory that it is a constitutional disease with the lung trouble as a local manifestation of it. And others still that it is not only constitutional in character, but that it is *infectious* and produced by a *specific poison.*

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One of the best and most recent articles on *croupous pneumonia* is the one in Pepper's system of medicine, written by Dr. Alfred Loomis, of New York. In his argument he plainly teaches that it is a general constitutional disease, and with a little inclination to the infectious doctrine. In his definition he says: "*Croupous pneumonia* is an acute general disease with a characteristic local pulmonary lesion." Under the head of etiology, he starts out with this skeptical statement: "The specific cause of pneumonia is as yet undetermined, and the very existence of such a cause is still a matter of conjecture." But follows it up with some points which lead us to believe that he has faith in a specific cause.

Juergensen says in Ziemssen Cyclopædia of Medicine (edition 1875), "Croupous pneumonia is a constitutional disease, and is not dependent upon a local cause. The pulmonary inflammation is merely the chief symptom, and the morbid phenomena are not due to the local affection. The hypothesis of a morbific cause is indispensable. *Croupous pneumonia* belongs to the group of infectious diseases."

Dr. Austin Flint, in a paper read before the New York State Medical Association, takes the position that it is an essential fever, the local affection being secondary thereto, and expresses his "belief in a *specific* micro-organism as the cause of the disease."

Klebs, Friedlander and others claim to have found the germ, and some even go so far as to assert that they can produce croupous pneumonia by inoculation. Friedlander proclaims that he has found a micrococcus in the exudate of croupous pneumonia, and believes it to have an etiological place in connection with this disease.

But in the July number of the *American Journal of Medical Sciences*, Dr. George M. Sternberg, in an exhaustive article, proves that there is nothing very definite in the claims of Friedlander, and asserts that he discovered in 1880 the identical micrococcus in the buccal secretions of his own mouth. He discovered it accidently in performing some experiments on rabbits, trying to prove as a comparative experiment whether a normal fluid, or secretion, injected under the skin would give rise to any febrile disturbance. He was surprised that it proved fatal in a very short time, and the great number of oval organisms found in the blood at once roused his attention. The experiments were repeated many times and un-

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der varied circumstances. He destroys conclusively some of the claims of Friedlander, but does not deny that they may have an influence in the production of croupous pneumonia, for he says: "It seems extremely probable that this micrococcus is concerned in the etiology of croupous pneumonia, and that the infectious nature of this disease is due to its presence in the fibrinous exudate into the pulmonary alveoli. But this can not be considered as definitely established by the experiments which have thus far been made upon the lower animals. The constant presence of this micrococcus in the buccal secretions of healthy persons indicates that some other factor is required for the development of an attack of pneumonia; and it seems probable that this other factor acts by reducing the vital resisting powers of the pulmonary tissues, thus making them vulnerable to the attacks of the microbe. This supposition enables us to account for the development of the numerous cases of pneumonia which can not be traced to infection from without.

"The germ being always present, auto-infection is liable to occur, when from alcoholism, sewer gas poisoning, crowd poisoning, or any other depressing agency, the vitality of the tissues is reduced below the resisting point.

"We may also suppose that a reflex vaso-motor paralysis affecting a single lobe of the lung for example, and induced by exposure to cold, may so reduce the resisting power of the pulmonary tissue as to permit this micrococcus to produce its characteristic effects."

If the *specific* character of this micrococcus can be positively proven, how easily then will the infectious doctrine be explained?

Dr. N. S. Davis, in his work on the "Practice of Medicine," is the only recent writer I have examined who plainly opposes the doctrine of specific cause or even infection and still adheres to the belief that it is a local inflammation rather than an essential fever. He says: "There is no tangible evidence that pneumonia is caused by any specific materies morbi, whether organic or inorganic. On the contrary, its occurrence to some extent, in all civilized countries and at all seasons of the year, yet being markedly influenced in the degree of its prevalence by both climate and season, its frequent association with pleurisy on the one side and bronchitis on the other; its constant variations in the amount of lung tissue involved, being in a large majority of cases unilateral, and in most of them confined

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to one or two lobes, and its entire exemption from the law that one attack destroys the susceptibility to subsequent attacks, render the question of its dependence on any specific exciting cause highly improbable, and give it much more fully the characteristic of an acute local inflammation, than of a general febrile disease."

It is to be hoped that before many more years shall pass, either the germ theorists will be able to prove conclusively their points, or the non-advocates to completely refute them. Up to the present time many of the germ theories have not been accepted by the profession, and it remains to be seen how the germ theory of croupous pneumonia will terminate.

That it is not purely a local disease can be advocated by some very strong argument. One of the most convincing is, that the experiments by the inhalation of noxious gases, vapors of pungent acids, hot air, cold air, moist air, tracheal injections, traumatic influences, all have produced negative results. And Loomis states that "these experiments have all the more weight since they have been conducted not only at different times, and in countries distant from each other, but also because they have been repeated by different pathologists, and always with a negative result, viz: The development of *lobular* or *catarrhal* and not *croupous pneumonia.*"

Juergensen positiyely asserts, that, "no one has ever yet succeeded in producing croupous pneumonia artificially. Croupous pneumonia can no more be produced by excitants of inflammation than can the characteristic intestinal lesions of *typhoid fever.*"

Another proof is that the constitutional effects are not in conformity with the amount of local disease. One author in arguing this point, quotes Flint as saying, "The affection of an entire lung does not always give rise to symptoms denoting great gravity of disease. The febrile movement is not always intense, and may be slight; the respirations may be little increased in frequency; cough and expectoration may be not only not prominent, but even wanting and the system be but little disturbed."

Juergensen declares: "During the whole course of pneumonia there is no constant relation between the local and the febrile symptoms nor dependence of one upon the other."

Still another is, that uncomplicated, it is self-limited and runs a

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definite course which is not the case with a purely local inflammation.

Dr. Flint quotes as an evidence that pneumonia is an essential fever, and not a local inflammation, the fact that croupous pneumonia rarely or never has any relapses, while in local inflammations they are quite common.

Cold has always been classed as a predisposing cause of pneumonia, but even that is meeting with opposition. Simply because it occurs oftener in the winter months is no proof that cold is the producing agent; for many diseases are more prevalent in cold weather than warm, but we do not ascribe the cause to the influence of cold. Loomis, in speaking on this point, says: "While it is not denied that cold is to a limited extent an exciting cause of pneumonia, the belief that it is the primary or principal cause must be held in abeyance if not altogether rejected." And he even more positively asserts that "the prevalence of pneumonia on this continent progressively increases from the poles to the equator."

I can not accept this statement fully, yet I am not in possession of facts to prove that it is false. Dr. N. S. Davis, however, in his work takes the positive ground that cold has a decided influence in the production of pneumonia. He gives statistics for the cities of Chicago, New Orleans and San Francisco, showing that during three consecutive years the proportion of deaths was greater in Chicago than New Orleans.

No one doubts the fact that pneumonia is more prevalent during the winter months, and Dr. Davis gives figures to show that two-thirds of all the deaths occur during the first six months of the year, and that the climax is reached in midwinter.

Cold has a very decided effect upon the very young or very old, because of its debilitating influence; renders them more liable to contract the disease. And right here it might be stated that any thing whatever which reduces the vitality of the system is really a predisposing cause of pneumonia; bad habits, bad hygienic surroundings, septic or miasmatic atmospheric changes, etc., and especially any cause which has a depressing influence on the nerve centers, thereby influencing the heart's action.

All the *infectious diseases* are more or less predisposing causes in their influence.

Age has an important bearing upon the prevalence of pneumo-

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nia, usually accepted as prevaling, more in early childhood, from 20 to 40 years, and old age or beyond 60. It probably destroys more old people than all the other combined acute diseases. It is even estimated to destroy nine-tenths of all who die of acute ailments beyond 65 years of age. *Sex* manifests little influence when the surroundings of each are the same, if any at all occurring oftener in the male sex.

There is still one other factor which certainly has or should have a place among the predisposing causes of *pneumonia*, yet I have been unable to find anything at all about it in print. I refer to the influence of *altitude*. Not a single author I have consulted says a word about it. I wrote to a very intelligent physician of one of our western cities, who has had quite an experience in the mountains with this disease, for his opinion on this particular point. He kindly replied that he regarded it as having a decided influence in the production of pneumonia; and further believed that it added greatly to the mortality. His reasons were very plausable and well founded, although he said he had no positive proofs to offer.

One of the chief reasons was the great diurnal changes of temperature those elevated regions were subject to. Warm days and cold nights making often times a difference of 40° to 60°. And can not this be the explanation of the great frequency of pneumonia in the temperate latitudes where the diurnal changes are from one extreme to the other? We will offer it as our belief, and will now pass on to the treatment.

Treatment—When we review the field of medicine and take into consideration the vast number of theories in *pathology*, *physiology* and especially *therapeutics*, we are profoundly convinced that it is a long ways from being an exact science. We are buoyed up, however, with the belief that in *pathology* and *physiology* at least, we are more nearly approaching accuracy—yet in these fields there are still many things vague and unsolved.

But when we approach the wilderness of *therapeutics* and see the myriads of theories and practices which have been cast aside as *worse* than *worthless*, we can not be surprised that ridicule should sometimes be heaped upon us. This is forcibly illustrated in the treatment of pneumonia. When pneumonia was regarded as a purely local disease, a powerful antiphlogistic plan of treatment was adopted,

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free and indiscriminate venesection, calomel, and tartar-emetic, veratrum viride and aconite were the *supposed panaceas.* Then followed the more rational plan of treatment; this again by the expectant mode, and now the advocates of the germ theory would have us pursue an *antiseptic* course. Who is right and who is wrong?

If the theory that *croupous* pneumonia is purely a local inflammation be accepted, then the old plan of blood letting, cardiac sedatives and depressants generally, is correct, and I can conceive of cases where in moderation it would be applicable. But the fearful mortality of this course of treatment caused Dr. Hughes Bennett to believe that there was something better, and under his guidance a revolution was brought about until now those severe measures are rarely resorted to. Again, on the other hand, if we receive the belief that croupous pneumonia is a constitutional, self-limited disease, then in uncomplicated cases, very little medication is required, and the *expectant* plan becomes the more rational and humane.

And now comes the question—are local applications to the chest, as poultices, fomentations, blisters, mustard, iodine, etc., of any real service? I have been a little skeptical on that point for some time, and the more I study the matter the stronger it becomes. According to the general treatment of the present, *croupous pneumonia* is not regarded as a local inflammation. If that be true then local applications can be only palliative, and bear no part, or at least a very small part, in the cure of this malady. It is easy to believe that when there is great pain with dryness of the surface a hot poultice, or mustard fomentations would be of much service, and I have seen cases where they afforded great relief. But that they have any specific curative effect upon the disease itself can not be accepted as proven. Again later on when hepatization seems sluggish about disappearing, the counter irritation of a blister sometimes hastens that process. But according to the more recent writers on this subject a pneumonic lung no more requires treatment than does the eruption in measles or the ulceration of the bowels in typhoid fever.

Peumonia it seems to me is one of the diseases in which great discretion should always be used, and especially in the administration of the cardiac sedatives, or any treatment which tends to depress or lower the vitality. In fact I believe there are but few cases where *veratrum, aconite, calomel, lobelia* or *tartar emetic* are ad-

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missible, at least I had rather give the patient the benefit of the doubt.

As there is comparatively little of the exudate in pneumonia expectorated, it would seem that the remedies usually classed as *expectorants* have but little influence in its removal. And where secretions accumulate it is probably from weakened muscular action which these remedies could not overcome. When the sputum becomes very tough and ropy, *alkalies* render it more soluble and easier removed.

Shall we use the *bath* in the treatment of pneumonia? To my judgment the bath is rarely or never indicated. And the strongest advocate for it I have read after (Juergensen) is careful to say: "One precaution, however, I must most positively insist upon; a patient with pneumonia must *never* be bathed without the administration of stimulants before and afterwards, and the amount of stimulant must be increased when water of a lower temperature is used, or the duration of the bath is lengthened." If such precautions are so absolutely necessary it must be fraught with more or less danger, and must require more discretion than the ordinary physician possesses for its administration.

The two chief indications, to my mind, in the treatment of pneumonia are the support of the *nervous* and *circulatory systems.* After the chill when the *nervous* system seems so prostrated, accompanied by much pain, a decided anodyne is certainly indicated, and I usually follow that course. Dr. Palmer, of Michigan University, used to claim that if he could see a patient early enough after the chill he could very often abort the disease; and his chief remedies were morphine and dover's powders, with quiet in bed. Great care should always be exerted, however, in the administration of opiates to the very young or very old, or after the stage of hepatization has fully developed.

Dr. Dougan declares that he never gives opium in any form to his patients in the mountains, with this disease. Where there is a weak and rapid pulse the cardiac sedatives should not be employed, no matter what the amount of fever may be. They increase the danger by weakening the heart's action. Digitalis and stimulants would be much better. It is the failure of the heart's action which produces death in perhaps the majority of cases, and many recogniz-

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ing this fact strongly advocate the use of stimulants. Dr. Davis opposes alcoholic stimulation and offers argument to prove that it is not so valuable as other forms of stimulants.

Quinine has been strenuously recommended by some authors for the reduction of temperature. I have never used it for that purpose in pneumonia, and believe that cases rarely occur in which the high temperature is the most dangerous symptom to demand such heroic doses of quinia.

A *routine* treatment is wholly and absolutely impracticable in pneumonia, and I am inclined in the majority of cases to favor an *expectant* and *supporting* plan, and at all times to *assist nature,* rather than to *force* her to throw off disease.

DISCUSSION.

Dr. Chambers—Mr. President, I think, sir, that the paper to which we have just listened is an exceedingly important one, far too important to be allowed to pass simply into the hands of the publication committee without discussion at the hands of the members of this Society. I am very glad, indeed, to find that the doctor has been able to present before us in so few words and in such clear language the pathology and the rational treatment of acute croupous pneumonia. I am glad furthermore that the doctor, true to his methods, makes a definite distinction between acute croupous pneumonia and catarrhal pneumonia with which it is commonly confounded. To begin with, the doctor has laid down very distinctly, to my mind, ground for belief that acute croupous pneumonia is no longer to be regarded as simply a local inflammation. I remember some time ago in our local society making a suggestion that there were good grounds for belief that pneumonia was no longer to be regarded as a local disease; and I can remember how one gentleman, a very able doctor, now dead, took me up sharply and reminded me that there was no use talking to him that pneumonia was anything else but a local disease. He had seen it too many times induced by a severe cold. One important case bearing upon the infectious nature of acute pneumonia occurred at the Reform School at Plainfield within the last year or two. I understand that an epidemic of croupous pneumonia occurred at that institution, in

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which forty or fifty little boys were affected with the disease within three or four weeks; and as it happened it proved afterwards that those boys were in the habit of frequenting a certain room the hygenic properties of which were not good. I have followed the same general treatment indicated by the paper in treating the disease. I have seen but very few cases in my experience which called for blood letting in any form. I think, however, that in a case of double pneumonia where both lungs are involved, and where the obstructions to the flow of blood are extreme blood letting must be considered as conservative treatment. I think the doctor who would hesitate to bleed would be standing in his own light and doing an injustice to his patient. Outside of this I don't think of any case in which blood letting would be desirable. I agree with the doctor that quinine does not do any good in the reduction of temperature.

Dr. Rooker—Mr. President, I understood the doctor to say in his very able paper that he does not think cold has anything to do in the production of pneumonia. I never was called on to treat a case of pneumonia in the summer in my life. It is always in the winter. I think I can trace the origin to exposure and cold of all my cases. But then I am only a country doctor and I do not know anything about your city arrangements.

Dr. Smythe—Mr. President, there is no possible doubt in my mind about croupous pneumonia being an infectious disease. Sixty-five per cent. of croupous pneumonia will recover without any treatment whatever; eight per cent. will recover with ordinary treatment; then you have twenty per cent. left which requires active interference. Cold baths to reduce the temperature should not be used where the heart is already flagging and the patient in an extreme condition. It should be used in the first dangerous symptoms of the disease. If it requires stimulants to sustain the heart's action, give them. Ordinarily there is no danger in the heart's action in the beginning of a case. I have administered quinine with good results, but recently I have used another drug, antipyrine, which has none of the unpleasant effects of quinine, and accomplishes even more. It does not weaken the heart's action and has no unpleasant sensations.

Dr. Helm—Mr. President, I have been told that it is hard to

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teach an old dog new tricks. A great many years ago I formed ideas from study and observation in regard to this disease that have left a mark upon me ever since. The winter of 1848 I spent in Northern Alabama, where pneumonia prevails about as ague did on the Wabash at that time. In that locality there was an old planter who did all the work as a physician in that neighborhood. His stock of medicine was a little wad of opium in one pocket, and a little calomel in the other. His uniform rule when he came across a case of pneumonia was first to bleed and then to roll up a little calomel and opium and give it. He followed that up until they were well. I never heard of a case of death while I was there. The other day in St. Louis a gentleman told me that his mortality was nearly sixty per cent. I am very strongly of the opinion that this is a local inflammatory disease. I have not been convinced by anything I have heard that it is a specific disease. I adhere to the old order until I have more convincing proof of their fallacy.

Dr. Schell—Mr. Chairman, I have seen many cases illustrating the doctrine of infection. Last winter in one family I had five cases of pneumonia following one after the other in such a manner that it would be reasonable to suppose that the last cases were infected from the first. I saw in connection with Dr. Pearson, who is by my side, four cases of pneumonia in one family. Dr. Pearson also waited on a family where there were three stricken. So it is reasonable to suppose that in all these cases there was an infectious element present.

Dr. J. W. Hervey—Mr. President, I do not rise to discuss this paper, but I wish to say, sir, that I have been connected with this Society for a great many years and it has always been my idea that all papers read should present original matter. There is nothing in the paper but what can be found in the popular literature of the day. Every medical man who is well posted is familiar with what the paper has presented.

Dr. McCaskey—While I do not want to say anything derogatory to this drug autipyrine, as a valuable agent in lowering temperature, I do wish to say there are cases in which it is positively dangerous. It is a drug that should be used very carefully.

Dr. Haughton—Mr. President, I have been testing the use of

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antipyrine for the last twenty years. It is not as safe a remedy as quinine and yet it may be used for the purpose of reducing extra heat.

Dr. Moyer—Mr. President, I wish to say in regard to the remark that was made as to the paper not being original, that if that charge were made against every paper that deserved it, it would be very sweeping. A good many papers would have been ruled out. The paper was certainly an able collation to say the least about it, and especially for a young man. He has brought together what the different authorities say about the subject. In regard to the infectious nature of the disease I want to state a fact in opposition to the theory. We had two men die in the town of Dublin last winter. They were shortly before in hearty health. They attended a meeting one very cold night during the winter, and they both sat together in front of a window. The house became so warm that they had the window raised. They both went home, took pneumonia and both died. One lived north of town, and the other lived south in the country. The probabilities are that there was no infection in that case and that it simply developed a local disease. These being the only cases that died in the vicinity during the whole winter, it would seem that they were caused from that exposure. I think somebody else would have taken it from them if it had been obtained by infection.

Dr. Kemper—Some nine or ten years ago I was called into consultation in the case of a gentleman suffering with a case of croupous pneumonia. He had been sick some five or six days. Only a small portion of the lung was involved. A strange complication had appeared. He was suffering also from dysentery. The next day the lungs seemed better, the dysentery was no better. The following day he died. The day before he died his son took sick with pneumonia, and two or three days after, the same complication of dysentery appeared. At the same time a child two years old took lung fever and also dysentery. We examined the well-water and found that pure. That had been a very cold winter and every crevice of the cellar had been stopped completely, hermetically sealed. There we found a great quantity of garden truck, decaying vegetables and rotten leather. The air from all that mass came up through the

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kitchen. We opened the cellar windows, had the cellar cleaned, took the young man up into the second story and that was the last of the trouble. Both the young man and the child got well.

Dr. Beard—Mr. President, it seems to be the fashion now to attribute every disease to a germ, and of course pneumonia must bear its share. I do not propose to say whether it is infectious or not, but if it be infectious there is one strange fact that we all know. In the winter time when every one is confined in the house they don't take pneumonia, but when the weather turns warm, the ground thaws and they get out of doors, particularly children, and get their feet wet and get a cold. It is a well known fact that they then contract pneumonia. We must be a little careful how we take up every new theory to the exclusion of medical experience. We don't know yet whether the microbe is a cause or an effect. I know that in our malarial districts they are peculiarly subject to pneumonia, and they do not recover from it without requiring an entirely different treatment from those cases in mountainous districts.

Dr. H. D. Wood—Mr. President, I have listened with a great deal of interest to the paper and the discussion. I wish to refer to a true instance in my practice in regard to pneumonia. During the winter of 1865 and 1866 almost every case that came under my observation in the months of February and March were cases of pneumonia. We called it an epidemic. That was not only my own observation but that of several physicians in that neighborhood. I made a report of a few cases to our county society and took the ground that it was a constitutional disease and not a local disease. I arrived at that conclusion from my own observation, not knowing that anybody else had arrived at the same conclusion. In 1870 and 1871 we had another epidemic in a certain neighborhood in our county; we had some fifteen or twenty cases of pneumonia all occurring in a small area. Some proved fatal inside of three days, others in four or five days, and some recovering. This and other facts prove to my mind that it is a constitutional disease.

Dr. Huff—The points that seemed to receive special attention were the influence of cold, and whether it was an infectious disease. You will remember that I did not deny that cold did have an in-

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fluence. You know that there are many diseases that occur oftener in the winter time than any other. Small pox is considered a winter disease, and yet nobody denies its infectious character. As to the treatment I simply summed up what I knew from observation and what I had gathered from reading.

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ETIOLOGY OF PNEUMONIA.

E. S. ELDER, M. D., INDIANAPOLIS.

Let us examine pneumonic inflammation a little. While Lænnec, Andral, Grisolle and other authors taught that pneumonia was a local affection of the lungs, yet they were unable to explain all the phenomena of the disease upon the basis of a local lesion; they introduced the term "Peri-Pneumonic Fever," thereby admitting the presence of a systemic malady. Slowly the pneumonic fever theory gained friends in France and Germany in 1873. Marrotte said: "There exists a disease identical by its causes, its general symptoms, its type, its duration, its critical terminations and even by its treatment, with simple synochial fever, from which it differs only by the presence of a local accessory affection, the pneumonia, which, during the entire course of the disease plays only the part of a simple phenomenon." In Germany Traube, Conheim, Jurgensen and others maintained essentially the same views; and their opinions may be summed up in the teachings in Jurgensen's article on "Croupous Pneumonia," in "Ziemissen's Cyclopedia" in 1875, viz: "Croupous pneumonia is a constitutional disease, and is not dependent on a local cause. The inflammation of the lungs is merely the chief symptom, and the morbid phenomena are not due to the local affection. We must admit a specific morbific agent. Croupous pneumonia, then, belongs to the group of infectious diseases." At the last Medical Congress in Berlin this pathologist repeated the above propositions in nearly the same words, the correctness of this statement has been generally agreed to; and they are now taught by our best authorities, and Traube has in a masterly manner demonstrated the truth of them. Without giving in detail his arguments, he lays

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down the following conclusions, which he considers demonstrative of, viz: 1. The disease has a prodromic stage; 2. The fever and contitutional symptoms often precede the local signs; 3. The local signs may be present without the fever; 4. The local lesions remain after the fever subsides; 5. The sudden and critical defervescence of the temperature; 6. The disease has a definite course and is self-limited; 7. The presence of the disease often can not be accounted for by any other theory. These views have been freely criticised and combatted by two parties; the first, those who maintain the view that this disease is a simple local inflammation of the lungs, and the other party who believe that all these phenomena result from an inflammation dependent upon a specific local cause. The adherents of the first of these propositions are becoming less daily and it seems that very soon the truth of Jurgensen's propositions as given in Ziemissen's Cyclopedia and at the International Medical Congress at Berlin will be admitted. Already it is conceded by the leading pathologists and authorities on both sides of the Atlantic. Admitting then, that croupous or fibrous pneumonia is a constitutional specific disease, there is necessarily no antagonism between the views of Jurgensen, and those who believe that the disease results from a primary local specific cause. We know full well that constitutional specific diseases are thus introduced into the economy; take for instance syphilis, this is evidently of primary local origin, and must go through an incubatory stage before systemic infection takes place. So with glanders, hydrophobia, the venom of animals and serpents, vaccinia and other well known maladies; and it is thought by many authorities that diphtheria is dependent upon primary local infection. We believe that septicemia, pyemia, cancer, erysipelas, and many other affections belong to this class which depends upon local infection primarily. But, without attempting to reconcile the belief of these parties, whose views are diverse in reference to the specific and general nature of fibrous or croupous pneumonia, we next inquire as to the identity of that specific cause; has it been isolated and identified? if so, what is it? and how is it? I answer that there are reasons for concluding that the specific nature of the poison is infectious, is transmissible by inocculation, and that the particular germ has been isolated. In 1878 Klebs announced the discovery of the "monas pulmonale." It was found by him in the

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lungs and ventricles, in the bronchial liquid and hepatized parts of pneumonic cadavers. Eberth, in 1881, described the same micrococcus as having been found in the membranous deposit in the lungs of a patient dead from pneumonia. Koch, in 1881, found them in the lungs of patients dying from pneumonia; Friedlander, in eight autopsies of pneumonic patients in 1881, noted the presence of these micro organisms; he was the first to announce the theory that they were the cause of the disease, and named the microccus, which he called the "pneumonia microccus." Leyden and Gunther in 1882 found them in the fluid obtained by puncturing hepatized lungs with a hypodermic needle; the microbe was also found in 1882 by Grifini. It has been found and described by Cambria, Matsey, Sifert, Sternberg, Strassman, Cornil, Koch, Afanassiew, Emerich, Klebs, Frankel, Platanow, Klein, Talamon, and many others.

The distinguishing features of this microbe are, its form, its mode of growth, its presence in pneumonic exudition, and its pathological effects as determined by inoculation. The form of the germ is elliptical, and much like the form of a grain of wheat, from one thousandth to 4½ thousandths of a millimetre in length, by ½ to 1 thousandth in width at the largest diameter of the ellipse. It is isolated, generally in pairs, sometimes in chains of fours; it may be cultivated in an artificial medium, (Koch's solid gelatine being most usually employed,) from the exudation of pneumonia taken from the living subject, from the sputa of the pneumonic patient, or from the exudation taken from the lungs of the pneumonic cadaver; its growth is peculiar, in the fact that it has a nail-like growth manner of development. It stains with Gentian violet and aniline water, afterwards immersing in alcohol to remove the stains from the capsule. This microbe is invariably found in all cases of fibrous pneumonia in infantile and adult life, and inoculation with it almost invarably produces the same disease in certain of the lower animals. Having thus established the fact that the organism was so constant an attendant on pneumonia, in 1883 the experimental demonstration by the culture of the microbe, and by inoculation, was undertaken simultaneously in Germany and in France, by Friedlander and Talamon.

Friedlander was the first to report, which he did to the Medical Society at Berlin, on November 19, 1883. After describing his

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methods of culture through several fluids, he had injected by means of a hypodermic syringe fluid containing the pneumonia coccus, directly through the chest walls of hares, Guinea pigs, mice and dogs. The hares, nine in number, were not affected; of five dogs only one died, and that presented the lesions of pneumonia; of the eleven Guinea pigs, six died, and presented clear pneumonic lesions. All the mice, fourteen, died, in from 18 to 28 hours after the injection. At the necropsy their lungs were found almost empty of air, and intensely congested with nodules of red induration, containing the microccus in abundance. In another series of experiments, mice were made to inhale a spray of culture fluid containing the coccus in suspension. Many of them died, and at the necropsy, says Friedlander, "We found developed typical pneumonia, and numerous encapsulated micrococci in the lungs, spleen, blood, and fluid of the pleural cavity." The French observer, Talamon, presented the results of his experiments to the Anatomical Society of Paris, on November 30, 1882, eleven days after Friedlander's report was given to the public. After passing the microccus derived from a hepatized human lung, through several cultures, he injected hypodermically the fluid containing the microbe into the pleural cavity, or into the lung tissue of two Guinea pigs, four dogs and twenty rabbits. In the Guinea pigs and dogs no appreciable results followed; of the twenty rabbits every one became sick, and sixteen of them died; of the four that recovered, after being sick from four to six days, every one attested the presence of the malady by the elevation of temperature noted day by day, by the crisis of the disease passing, and a fall of temperature and recovery. Of the sixteen which died, two of them presented no alterations of the lungs, but showed a fibrino-serous pleuritis, and an extensive fibrous pericarditis. The remaining cases presented the lesions of fibrinous pneumonia, such as is seen in man, occupying in some cases all of one lung, and sometimes the middle portion or inferior lobe. The pneumonia coincided in every case with a pleuritis of the same nature, and in most cases with a fibrous pericarditis; in no case was there any suppurative inflammation. The blood of the animals as well as the fibrous exudation, contained "pneumonic micrococci" in abundance, and the culture of fragments of the diseased tissues, constantly reproduced the characteristic microbe of pneumonia. The

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lungs of the hares were presented to the Society for examination, and were found to constitute specimens of true pneumonia, which leaves no room for doubt or dispute, and the report says: "It is by no means an affair of nodules or lesions of broncho pneumonia, or of congestion, such as we habitually observe in hares, dead from septicæmia, but of a veritable lobar fibrinous pneumonia, with pleurisy or pericarditis of the same nature. The naked eye examination, as well as the microscopic examinations, showed no difference between the lesions produced in the hare's lungs and the pneumonia of man; the inflamed lung tissue was dense, weighing three or four times as much as the healthy lung, of a yellowish black color, friable under the finger, sinking when placed in water." Afanassiew has repeated the experiment of Friedlander and Talamon in the laboratory of Prof. Cornil, by the cultivation in gelatin of pneumonic exudation taken from a cadaver. He obtained the "pneumonia coccus," which when injected into Guinea pigs and rats, produced disease and death from pneumonic and pleuritic inflammations, with all the post mortem appearances described by Talamon. This observer injected a large amount of the culture fluids in dogs, which produced fever and sickness, and upon the dog's being killed, by other means, it was found that the lungs were markedly hepatized, and filled with the microbe of pneumonia. These experiments have been frequently repeated in Europe with like results. In America a series of experiments with the "micrococcus of pnoumonia" have been made at the Johns Hopkins University, Baltimore, under the supervision of Dr. Sternberg, U. S. Army. Sternberg *discovered* the microbe accidentally in 1880, and photographed it and illustrated an article with these photographs, which was given to the world in the bulletin of the Nat. Board of Health in 1881, and also in Vol. 2, No. 2 of Studies from the Bibliographic Laboratory of the Johns Hopkins University; and also republished in his (Sternberg's) work on Bacteria, in 1884. Sternberg's first papers were upon a fatal form of septicæmia in rabbits and the connection of the micrococcus therewith. As Sternberg's first paper was published with the microbe figured some three years before Friedlander's discovery of the organism in the exudation of fibrous pneumonia, Sternberg claims the privilege of naming the bacterium, to which he has given the title of "Micrococcus Pasteuri," in honor of the

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immortal French bacteriologist. All observers agree that Sternberg's original microbe is the one figured by Friedlander, so that to an American mycologist belongs the honor of this discovery. During the year 1885 Sternberg and Rohe, of Baltimore, inaugurated a series of experiments in the Johns Hopkins University to determine if possible the relationship between the microbe and pneumonia. Sputa was taken from several persons suffering from pneumonia, and was found to contain the microbe. Rabbits and Guinea pigs were inoculated with this fluid, and invariably the animals succumbed to what the post mortem examination proved to be pneumonia, and their lungs and blood were filled with the microccus of pneumonia. These experiments and observations were so frequently repeated and with such uniform results, that Sternberg, although a most cautious and non-committal observer says: "It seems extremely probable that this micrococcus is concerned in the etiology of croupous pneumonia, and that the infectious nature of this disease is due to the presence of this organism in the fibrinous exudate into the pulmonary alveoli." Prof. Germain See, of the Hotel Dieu in Paris, author and teacher of forty years' experience, in his new work accepts and propounds the theory that the Friedlander microccus of pneumonia, and Sternberg's microccus Pasteuri, are identical, and that they are the specific cause of croupous pneumonia. Experimenters are hard at work investigating the pathogeny of this organism, and we may soon hope to have the matter determined. If it shall be demonstrated that croupous pneumonia owes its existence to, or is dependent on the micro organism figured first by Sternberg and Friedlander, we can at once find an explanation for the occurrences of the severe epidemics of pneumonia, which from 1348 to the present history furnishes many examples, and with which the sanitary experience of cities, towns, families, jails, ships, armies, schools, public institutions and individuals, abound. All of us who have been engaged in the practice of medicine for a considerable length of time have witnessed periods when an apparant wave of severe pneumonia would pass over a community, prostrating and killing an undue number of people. We have hitherto been compelled to acknowledge the severity and malignancy of these visitations, and attributed to them toxæmic powers, which were inexplicable. By placing this malady in the class of infectious diseases

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characterized by a specific microbe, owing and depending for its existence upon the same surroundings and influences which nurture and disseminate small-pox, cholera, diphtheria, scarlet fever, plague, typhoid fever and other recognized infectious maladies, we obtain a clearer conception of it than we have hitherto had. It is not contended by any one that this disease possesses the same degree of infectiousness that belongs to some of the other diseases, but that under certain surroundings and influences, upon favorable subjects, infectiousness belongs to it.

The discovery of this organism by Sternberg was accidental, and not in connection with the study of pneumonia. He says: "I made this discovery in the summer of 1880, quite accidentally, having injected a little of my own saliva under the skin of a rabbit, as a comparative experiment, to ascertain whether a fluid, supposed to be innocuous, would give rise to any febrile disturbance. The promptly fatal result, and the presence of a multitude of oval organisms in the blood at once aroused my attention, and I have since made numerous additional experiments, at different times and places, and always with the same results, viz: The animals die in from 24 to 48 hours; they present the same pathological appearances, and their blood is infectious in the smallest quantity, and it contains vast numbers of the oval micrococcus, which I have named 'Micrococcus Pasteuri,' and which is admitted to be the 'pneumonia coccus' of Friedlander. They can only be studied under the power of the best oil immersion objectives of $\frac{1}{12}$ to $\frac{1}{18}$ inch homogenous immersion, and by the most approved methods of staining and mounting." Says Sternberg: "Upon making sections of the tissues of a rabbit, dead from this form of septicæmia, these micrococci are found in great numbers in the capillaries of the various organs, and I have repeatedly produced this infectious disease in rabbits by injecting under their skins pure cultures of the micrococcus in question." Another fact has been determined by Sternberg's experiments, viz: That the pathogenic powers of this microbe differs at times, although derived from the same source. Again, still more singular is the fact that its virulent power differs in individuals. Thus, the saliva of four students at Baltimore a few months ago gave negative results in every case; eleven rabbits, injected with the saliva of six students in Philadelphia, gave eight deaths; in other cases negative results

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obtained from other of the Philadelphia students, while two of them *Cubans*, furnished buccal secretions which were uniformly virulent, and like Sternberg's saliva, always produced the lesions of fibrous pneumonia, swarming with the micrococcus. Sternberg throws out the suggestion that the fact of his spending nearly all of his life in the South, and in the Tropics, may account for the virulency of the secretions in his mouth, and that the Cubans owed their potency to the same cause. Claxton, of Philadelphia, in a series of experiments upon this matter reports that, "I also have observed that the same remarkable virulence in the residents of tropical countries, as Cuba and Brazil, as also in the case of negroes, the saliva of which latter race exhibits it to a remarkable degree."

"The results of inoculating animals with the buccal secretions of certain persons, and with the exudation in fibrous pneumonia, and with the blood of animals having died from the results of previous inoculation, have been uniformly the same, viz., a form of septicæmia characterized by well marked lesions of fibrous pneumonia, and the universal presence of the pneumonia micrococcus." Granting that this organism is in the buccal secretions of healthy persons, it would follow that the disease would be more prevalent in that class of persons possessing the greatest virulence. Hence we would expect to find it more prevalent among the inhabitants of the Tropics and warm regions and among the negro race. So far as I know no inquiries have ever been made in this direction. Let us glance at these new questions. 1st, as to locality; the presence of pneumonia is largely controlled by conditions which tend to lesions in the pulmonary system, therefore it is to be expected that it is most prevalent in localities where violent oscillations of temperature abound, and where a low temperature prevails. These conditions insure congestions, irritations, and local lesions which are favorable to the introduction of the specific cause into the tissues and circulation of the individual. These facts necessitate a greater prevalence of the disease in the colder and damper parts of the country, so that pneumonias are most prevalent in the northern portions of the United States; but, we all know that persons from the South are much more liable to the disease than are those who have been raised in the northern climes, and the chief danger to a Southerner in passing a winter in the North, is from pneumonia. This gives credence to the views

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of Sternberg and Claxton upon the first part of the proposition, viz., that persons from a warm climate possessed an unusually virulent pneumonic buccal secretion. But how about the fact of the negro race being possessed of an extremely virulent saliva, and thus in greater danger from auto-infection? Are they particularly subject to pneumonia? I answer, yes, in a remarkable degree. From the mortality reports of various Southern cities we learn that the deaths from pneumonia among the colored race are proportionately greater than among the whites; and from the mortality tables in the tenth volume of the U. S. Census of 1880, we learn that the average deaths from pneumonia in the United States was 117 in each 1,000 deaths from known causes. But, among the whites the deaths from pneumonia were 108 in each thousand deaths; among the Indians 102 deaths from pneumonia in each 1,000 deaths; whilst among the negroes the deaths from pneumonia numbered 141 in each 1,000 deaths; a mortality from that cause more than 30 per cent. greater than among the whites. This certainly means a greater liability to the disease among the blacks. I know it may be urged that the negroes, since the war, have migrated largely from the South to the more vigorous Northern climate, and suffer from pneumonia unduly in consequence of that fact; yet, that will not explain their greater susceptibility to pneumonic inflammation. From the census reports we learn that Grand Group No. 4 is composed of the States lying on the Gulf Coast, viz., the States of Texas, Louisiana, Alabama and Florida. Here, the negro is certainly in his native Southern climate; the mortality reports from these States prove that among the whites there were 59½ deaths from pneumonia in each thousand deaths; while among the negroes in the same locality there were 86¼ deaths from pneumonia in each one thousand deaths, thus showing in their native climate a mortality from pneumonia 48 per cent. greater than that among the whites. Again, it may be claimed that the hygienic surroundings may account for this, but we can not admit this; I know that the death rate is greater amongst the negroes than the whites. For the U. S. it is 17 per thousand among the negroes and 14 per thousand among the whites; but unhygienic surroundings increases the deaths from all causes and does not especially disturb the proportion of deaths from any one cause. However, we have other data which assists still more. From the records

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of the Medical and Surgical History of the War of the Rebellion we learn that the deaths from pneumonia among the white soldiers were 88 per thousand deaths from known diseases, while amongst the colored troops the deaths from pneumonia were 180 in each thousand deaths from disease, the hygienic surroundings in each were much the same, yet the mortality from this disease among the colored troops was 104 per cent. greater than among the whites. These figures compel the conclusion that the colored race is much *more liable to pneumonia than the whites,* and bear out the idea that the virulence of pneumonic micrococci, viz., their buccal secretions, is a factor in the production of the disease.

This conclusion is also borne out by Grisolle in his statistics of the disease as it occurred among the Colonial troops of the English army. Grisolle says that the negro soldiers are much more frequently attacked by the disease than the whites; and Rodman, in giving an account of a severe epidemic of the disease which broke out in the Kentucky State Prison a short time ago, although the number of black and white prisoners were about equal, yet there were fifty more negroes attacked than whites, and among twenty-six deaths only one was that of a white man.

I am well aware that the morphology of this pneumonia micrococcus is not yet satisfactorily determined, and while further investigations are being made we must be reserved in our decisions. It seems clear, however, that the identity of the Friedlander micrococcus and that of Sternberg is well established, and that it is constantly associated with the exudation of fibrous pneumonia. It has also been demonstrated that it is a pathogenetic organism, so far as lower animals are concerned, and it is probably an important factor in the etiology of croupous pneumonia, and that the infectious nature of this disease is due to its presence in the fibrinous exudate into the pulmonary alveoli. Its constant presence in the buccal secretions of healthy persons indicates that some other factor is required for the development of an attack of pneumonia, and it seems probable that this other factor acts by reducing the vital resisting power of the pulmonary tissues, thus making them vulnerable to the attacks of this microbe. This supposition enables us to account for many cases of pneumonia, which are otherwise unaccounted for, and which can not be traced to infection or cause from without.

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The germ being always present, auto-infection is liable to occur from numerous extraneous causes, alcoholism, crowd poisoning, sewer gas, senility, imperfect nutrition, debility from disease, exposure, traumatism, exposure to cold or wet, over-exertion, or any other depressing agency that reduces the vitality of the tissues below the normal resisting point. "We may suppose also, that a reflex vaso-motor paralysis affecting a single lobe of the lung for example, and slight exposure to cold or irritation may so reduce the resisting power as to permit this micrococcus to produce its characteristic effects." Again, we may suppose that a person whose resisting vital power is reduced by any cause, may be attacked by pneumonia from external infection with material containing micrococci of greater pathogenic power than that contained in his own buccal secretions. The exemption of certain persons from pneumonia may result from diverse causes; the increased tenacity of the mucous membrane of their pulmonary organs and the absence of the virulent micrococcus, etc.

Such, gentlemen, are some of the views and results of the experiments of the most recent investigators in this new field of bacteriology. Should future research prove them well founded, the etiology of pneumonia will be founded on a new basis, and the therapeutics of the disease will be controlled by a clearer conception of the disease than that which has heretofore existed, and the diversified methods of treatment will be simplified, and if not more successful will be more scientific and more satisfactory.

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STUDY OF HEREDITY IN THE TREATMENT OF DISEASE

BY DR. RACHEL S. BAILEY, M. D., OF SPICELAND.

Inheritance is a law of our being, as immutable as any of those that control our natural life.

That man is found in the image of God is the result of God's creative act, but the command to "replenish the earth" implies the condition of inheritance, bestowed by creation upon man in common with other attributes or provisions of his existence.

Doubtless it was the purpose of the Divine Mind that this image should be preserved and perpetuated intact and pure. The thwarting of this purpose, and the perversion of the image is on the part of the subject, not of the Infinite Sovereign. He makes no requisitions of His children, for which He does not provide the means of fulfillment. And this law of inheritance is for the good of man, otherwise it had not been given; and unperverted, it must be for the glory of the Giver, else He could not have conceived its establishment. An architect makes no room or niche in the building he constructs, that will not be for utility or beauty; much less can we conceive that the Great Designer and Architect would place any restrictions on the workmanship of His hand that would be inconsistent with the highest interests of the creature; or the glory of the Creator.

We can not indeed understand the reasons for, nor the workings of this subtle law, but we accept it none the less, and should give heed to carry it out as best we can, whether directly by taking cognizance of the ways and means or indirectly by natural instincts or impulses, which are as truly an inheritance handed down from parent to offspring, as are any of the essential properties or conditions of human life.

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As the beauty and vigor of manhood or womanhood is bestowed upon the child, so is disease or weakness imparted to it; to lie latent in many cases, until some fostering circumstance gives life to the germ of evil and promotes a development which ends in death.

It is with this phase of the fact—we may scarcely yet call it a science—that we, as physicians, are called upon to deal.

Finding an effect—disease—we can not intelligently apply our healing arts, unless we have more or less acquaintance with the cause; whether it be inherent in the system or induced by influences from without.

In pursuance of this study we shall be met at the outset with, serious obstacles; the obscurity of the data from which to deduce proofs, and the difficulty of deciding where the influences of inheritance end, and those of education and environment begin; make it next to impossible to fix the limits of individual and ancestral responsibility; but leaving much of this to the psycologist, there is yet a field for investigation in this direction which may fitly claim the consideration of the thoughtful, conscientious physician.

Heredity as a science is yet in its infancy, having barely passed the "fact-gathering" stage, but that it is fast assuming the dignity of other scientific propositions, we are bound to admit.

A recent writer on this subject thus defines the term: "Life, the vital principle, though in a sense undefinable, yet compelling recognition, she calls, 'God's plan for each individual,'" and then "*Heredity*—The sum of all the ancestral forces and life." Possibly a clearer definition might be found, but this very nearly expresses the idea which seems to be comprehended in this newly coined word. And quoting further from the same author: "Heredity *culminates* in the *individual* at his birth." All down the line some trait or feature is transmitted, some fraction of the life before reappears in the life succeeding; it may be more, it may be less; still a fraction; each force or person contributing some share, some characteristic, and these culminating, make the individual complete, as far as heredity is concerned, at birth. So the man, accepting the poet's philosophy, "That the child is father to the man," enters life with all the past that certain contingencies have conspired to center in him. From this point, other influences, the environment of infancy; opportunities of development; all the various accidents of life, have

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a part in the structure of the individual, and are to decide what he will be. But we are told "whatever affects life, whether in its individual, species, or cosmic relations, affects heredity"—affects all that enters into the physical, moral or intellectual being. In his organization the one part can not be considered separate from the other, for each in turn reacts upon the other; but that which most interests us to-day in connection with this subject is its relation to the pathological condition of the physical man, or nature.

In disease either of an acute or chronic type, all these ultimate relations have to be considered as having significance, and if it were possible to fully comprehend them, not only would the diagnosis in many cases be clearer, but the applied remedy would in consequence act more surely. I am aware that some diseases which were for centuries looked upon as hereditary, are now regarded by men eminent in the profession for scientific research, as simply contagious; but even if this were proven beyond a doubt, in some special instances it would not invalidate the law of inheritance, nor would the facts given to establish such proofs conflict with the manifold facts that prove "inherited tendencies," and veritable inherited disease.

In a paper read before the College of Physicians in Philadelphia about a year ago, this statement is made in reference to tuberculosis: "Much stress has been laid upon heredity as being one of the chief causes of mortality from this disease. It is my belief that phthisis is never transmitted from parent to child. It is simply a predisposition that is inherited. By predisposition I mean a greatly lessened power of resistance in the tissues; especially in the lymphatic tissues."

Further investigation may prove this theory to be correct, but it remains that *the predisposition is an inheritance*, either of diseased tissue, or of conditions favorable to the development thereof; and that in either case this strangely subtle influence should be carefully taken into account, in the consideration of disease and remedy.

An acquaintance with the hereditary peculiarities of a patient may help to determine with more certainty the seriousness of slight departures from health, whether structural or functional. As, one may be suffering from pneumonia, with symptoms not more acute than we conceive to be consistent with final recovery; but a knowl-

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edge of congenital or hereditary taint, or of tubercular affection in progenitors, would give the case a graver aspect, educe a less favorable prognosis, and might suggest a variation in treatment, and lead to more watchful care of the invalid.

Is it not possible that such inquiry would throw light upon some diseases which hitherto have seemed to baffle all recognized remedies, and that by an intelligent application of the principles of heredity in the treatment of disease, the physician might with much less varying success, cope with the multiform ills that "flesh is heir to?"

It was not the intention of this paper to discuss the possibilities arising from a study of this subject, but to call attention to the importance that might attach to a systematic investigation of whatever truth there may be in it. If any thought in this shall set a better thought in motion, my time and your patience may not have been spent in vain.

DISCUSSION.

Dr. Lomax—Mr. President, permit me to thank Dr. Bailey for bringing this subject up. She has pointed out a line of thought that should be pursued by every physician. It is known that a large per cent. of our diseases has been referred to struma or scrofula. It calls my attention to a statement made by Dr. Gross, which undoubtedly makes the cold chills run, that all scrofula was a retained syphilis. In studying heredity we must not stop at one or two generations. I have long been a believer in heredity, not only with reference to physical but to moral conditions. I am proud for woman's sake that Dr. Bailey has presented this subject here.

Dr Boyd—Mr. President, I am glad to hear Dr. Bailey read her paper. I am happy to know it was a woman, and when I say that, I do not mean to make any odious distinctions between men and women as doctors, because if there is anybody on the face of the earth that has more right than anybody else to cure disease, perhaps it is woman. She can do good in the world. She has some advantages that we have not now and never will have. In regard to "heredity," something will be done in the future. It is just beginning to see light. If there was one-tenth of the attention paid to the propagation of the human race that there is to our fine stock,

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a few generations would tell on the morals of society generally, but this can only be hinted at now. In the future there will be some avenue, some door opened, by which man can regulate the propagation of the species. In that day they will not allow the hoodlums of the country to furnish foul men and women; they will not allow the offscourings of the earth, with their ill health and ill habits, to furnish most of the mankind that inhabit the earth. I believe in the progress of humanity. I believe the time will come when humanity will make that kind of progress, so that if there be no real millennium it will be so near that we will scarcely know the difference between the ideal millennium of which we talk and that which we realize.

Dr. Blount—Mr. President, this is a question, as has already been said, of more than ordinary interest. Not only the tendency to inherit disease but the tendency to inherit mental and moral conditions, is settled without a doubt in my mind. I have thought of it for years. We see families where the drink habit is found; where the parent is a drunkard we expect to see it in the child. Here is a question of vast importance, and there is no other class of society that ought to stand up with a bolder front against the evils that are extant because of these inherited tendencies than the medical profession—and I include of course the female portion of the profession. There is no profession by which this question can so appropriately be brought up for the consideration of society generally, because the family physician has really more influence in the family than even the minister himself; and he should be ready to fortify society against these pernicious influences and to prevent the evil results, moral and physical.

Dr. J. W. Milam—Mr. President, I want to say that hand in hand with the doctrine of heredity goes the doctrine of intelligent phrenology. Now, I expect to see smiles on the faces of a good many, because doctors, as a class, do not believe very much in "bumpology," at least. You tell by looking at a man something about how strong he is, something about the development of his breathing power; and you tell by looking at a man something about his reasoning power. We know that all apple trees having long limbs and long leaves have long apples. You never get a broad,

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short apple except from a broad-spread low tree; and so it is in the spiritual world, and in the moral world. It is the duty of doctors to study phrenology enough to know whether to accept or reject it. I make no plea for anybody to believe in it, but I do make the plea for doctors to study it, because every man whom I know that has studied it two weeks, is a believer in the principles of phrenology.

Dr. Bailey—Mr. President, I have nothing to say except to add that I am thankful for the courtesy shown in according a woman the same freedom and privileges that men enjoy. In regard to the question of "heredity," my attention was called to this inquiry by seeing so many cases where the application of remedies which ought to be efficacious is only helpful and not curative. I do hope others may give the matter more serious consideration.

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PNEUMATIC DIFFERENTIATION.

BY G. W. M'CASKEY, M. D., FORT WAYNE, IND.

There is a growing tendency on the part of the medical profession, and of the general public, to appeal to the operations of natural law for the alleviation of human suffering. The surgeon resorts to compression for the removal of plastic and serous exudates; the aid of gravity is often invoked to relieve the painful tension of inflamed tissues by such a position as will permit the fluids to flow to more dependent structures. And so, in the treatment of pulmonary disease, attention has been called again and again, and with increasing force, to atmospheric pressure as a mechanico-therapeutical agent. The evolution of theory and practice has been irregular and slow. To trace it would be to outline the entire history of pneumotherapy, which is not at present intended.

My present purpose is to present in a very general manner the subject of "Pneumatic Differentiation," by which may be understood an artificial change in the density of the air. With special reference to the respiratory organs it will be found upon reflection that there are four, and only four, possible differentiations. 1. Complete immersion in an atmosphere of increased density, breathing the same mediums. 2. Complete immersion in a rarefied air, breathing the same medium. 3. Immersion in an atmosphere of given density, breathing a relatively rarefied medium. 4. Immersion in air of given tension, breathing a relatively dense medium.

If anyone should have the temerity to deny the potency of these changes upon the organism, it would be necessary only to refer to the vomiting, paralysis, vertigo or coma of Caisson's Disease, produced by dense air; to the rupture of superficial blood-vessels during the ascension of high mountains; while the impossibility of

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respiring into and from a receptacle of air of extreme rarety or density is so obvious as to only require mention. Inside these danger limits there is, however, a wide variation. The extent to which differentiation can safely be carried must obviously vary with age, sex, dynamic force of respiratory muscles, structural condition of lungs, and state of circulatory apparatus.

With regard to the first condition, viz., immersion in, and breathing of a dense medium, it would seem that the pressure may be increased one atmosphere without danger of engorgement of brain and cord, or the forcing of nitrogen into the blood. In other words until the barometer stands at sixty inches instead of thirty—a differentiation of thirty inches.

In regard to the second condition, viz., immersion in, and breathing of rarefied air, we can take a hint from natural conditions found in elevated regions. The barometer at the summit of Mount Blanc stands at about seventeen inches. It seems reasonable to assume that the same degree of rarefaction would be equally safe under artificial conditions. Indeed, the experiments of Paul Bert show that a much greater rarefaction can be endured, if oxygen is freely supplied. We can then assume, as within the limits of safety, a range of pressure equal to a column of mercury forty inches in height, equal to a pressure of twenty pounds to the square inch. The influence of these variations of pressure upon the functions of the body must be enormous. The forces of the circulation are delicately adjusted to counterbalance a certain average pressure of about fifteen pounds to the square inch. If this pressure is materially increased the capillaries of skin and lungs, and of tissues which are not protected by bony or cartillaginous casements are the first to be affected. Their calibre is diminished by the pressure, as demonstrated by the extreme pallor of workmen in Caissons, and the volume of blood which they contain is driven to the heart, and vessels which are protected from pressure. The quantity of gases which the blood holds in solution is increased directly with the pressure. With double the pressure there will be double the amount of gases held in solution in the blood, and so on. The heart must be stimulated to contract with unwonted energy by the increased volume of blood which it contains. This blood is largely sent in the channels of least resistance. The cerebro-spinal axis in its bony case

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must be spurred into unusual activity by its increased blood supply. The domination of the nervous system over every function of the body readily suggests how marked an influence increased atmospheric pressure might thus indirectly exert over every nutritive and morbid process.

Time will not permit to further trace these processes. Rarefaction must act in many respects diametrically opposite. Removal of pressure will distend the capillaries, and will lessen the amount of gases which the blood holds in solution. This decrease may become so extreme that the blood will not contain sufficient oxygen for nutritive purposes. Arterial blood may even contain less oxygen than venous blood normally contains, and the individual die of asphyxia, in a perfectly pure atmosphere.

These changes of pressure to be safe must be gradual. A sudden decrease might liberate free gas in the blood, and thus result in thrombi and death.

We have left for consideration the last methods of differentiation, in which the air entering the lungs is of a different density from that which surrounds the body. The limits of these changes in pressure are defined by entirely different considerations. If the body is surrounded by an atmosphere of given tension, and the lungs are placed in communication with a relatively denser medium, inspiration is involuntarily accomplished by a process of inflation; but expiration is labored, and at a certain point mathematically determined when the differentiation exceeds the dynamic force of the expiratory muscles becomes impossible. Conversely, when the inspired air is of lowered tension, expiration is accelerated by the weight of pressure on chest wall; inspiration is labored; and, at a corresponding point when the dynamic force of inspiratory muscles is exceeded by differential pressure, also becomes impossible.

The dynamic force of the respiratory muscles varies, of course, in different persons. In my own person I find by actual experiment that my expiratory muscles acting with elastic tension of lungs, are able to sustain a column of mercury $2\frac{1}{2}$ inches high; while my inspiratory muscles will only sustain a column $1\frac{3}{4}$ inches high. From experiments made on a few persons I am inclined to accept these figures as approximately correct. It follows then that a differentiation of two inches, or $\frac{1}{15}$ of an atmosphere makes inspiration im-

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possible, and that a differential pressure of three inches or $\frac{1}{10}$ of an atmosphere would make expiration impossible in a person of good average muscular development. Practically a differential pressure far beneath these limits is used. Owing to structural changes in the lung tissue and circulatory organs, and weakened state of chest muscles, it may be necessary to commence with a pressure as low as $\frac{1}{10}$ of an inch—or $\frac{1}{300}$ of an atmosphere.

The discussion of the effect of inspiration of a relatively rarefied medium will have to be entirely omitted owing to lack of time. And before discussing respiration of an atmosphere relatively denser than that surrounding the body, a few words will be given to a description of the particular mechanism invented by Mr. Joseph Ketchum, which it is now proposed to use for this purpose.

Briefly, then, it is an air tight cabinet, of suitable size and construction to receive a patient, with proper appliances for rapidly increasing or diminishing atmospheric pressure, and for the patient breathing into and back from the normal air. Thus it will be observed that the cabinet can be utilized for any one of the four methods of differentiation above mentioned, to which may be added a combination of the last two, resulting in alternations of compression and rarefaction, during the same respiratory act. It will also be noticed that when the patient, in using this cabinet, breathes an air denser or rarer than that which surrounds his body, that he is always breathing the normal air of the space in which the cabinet is placed. The only change is in the tension of the air which surrounds the body, thus making the outside air relatively denser or rarer.

Let us consider now, somewhat in detail, the process and results of lowering the pressure around the body, and causing the patient to breathe the normal air. This is the method which has been most extensively practiced, and with which the great bulk of clinical results has been obtained. The degree to which this method of differentiation can properly be carried, must vary widely. As intimated above, the muscular efforts of the two respiratory acts are exactly reversed. The inspiratory muscles are replaced by the force of the inrushing column of air; while the expiratory muscles are compelled to forcibly expel the air, which the elastic tension of lung

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tissue is now unable to force out. In short, inspiration is passive, while expiration is active; just the reverse of normal conditions.

If the pressure of 2½ inches represents the entire expiratory force, then to go beyond this would be to make expiration impossible. But it is manifestly neither desirable nor safe to approximate this extreme limit of antagonism. As a matter of fact, Dr. H. F. Williams, who has had a wider experience than any one else, rarely uses a pressure as great as one inch, often commencing with one or two tenths of an inch.

The purpose of this method of differentiation is mechanical and medicinal. The mechanical effects are many and far reaching. There is, first, the removal of a certain amount of pressure from the body, which tends slightly to increase the capacity of the cutaneous capillaries, and possibly relieve internal engorgement. The relatively dense air from the outside rushes in, filling every permeable lobule, and distending cells and alveoli which were partially collapsed before. In this respect it resembles the inspiration of condensed air, and accomplishes expansion and consequently ventilation of lung structure which forcible voluntary inspiration could not have produced, because of weakened state of chest muscles. The mere expansion of functionally inactive air cells and alveoli is in itself a powerful agent. To effect this at the apices would alone, in many cases, prevent the development of phthisis, or arrest it if developed. The quickening of nutritive processes; the removal of blood stases, and the mechanical pressure exerted upon the inter-alveolar walls, are alike beneficial. With nutritive processes normally active the deposition of tubercle would probably be impossible, and any agent, be it mechanical or otherwise, which brings about a higher tone of general or local nutrition, is antagonistic to the development of tubercle.

The effect upon the circulation of respiring a relatively dense air from without while in the cabinet does not seem clearly determined. Dr. E. Tiegel, from a series of experiments, has reached the conclusion that arterial tension is increased. I do not, however, feel disposed to accept his conclusions. Arterial tension, so far as it is dependent upon respiratory influences, is mainly determined by the volume of blood. The relatively dense air will increase intra-thoracic pressure, which will diminish the calibre of

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the veins and thus decrease their current of blood. If the differentiation be in excess of the elastic tension of the lungs, there will be no lowering of pressure in pleural sacs, as occurs in normal respiration. It is this lowering of intra-pleural pressure which aspirates blood into the right heart, precisely as it aspirates air into the lungs, thus increasing the volume upon which the heart contracts, and consequently increasing arterial tension. This factor of so-called aspiration which increases arterial tension during normal inspirations is entirely absent and replaced by opposite conditions.

The increased number of heart beats per minute while in the cabinet, as uniformly observed, is further corroboration of the view that arterial tension is lowered; for in accordance with Morey's law the arterial tension is inversely proportioned to the frequency of the pulse. The experiment with the manometer connecting with the trachea is hardly conclusive. Reasoning from the foregoing facts, and in the absence of positive proofs to the contrary, I am forced to the conclusion that arterial tension is lowered.

There are many other important features of the mechanical effects which might be dwelt upon if time permitted, but what has been said will have to suffice.

More important, perhaps, than the mechanical effects, are the possibilities of direct local medication. Antiseptics, astringents, alteratives, and sedative applications can be made to the lining membrane with a thoroughness never before accomplished. The evidence supporting this assertion is entirely conclusive. Take the case of Dr. Williams, in which a pulmonary abscess was opened externally, and dressed with a starch bandage. The patient was placed in a cabinet, and a three per cent. solution of iodine used in the spray, when the characteristic reaction was demonstrated. We are forced, it seems to me, either to deny the fact or accept its logic. Numerous experiments made with lungs of lower animals demonstrate with equal certainty that medicaments held in suspension in the atmosphere can be carried by the agency of the pneumatic cabinet into the deepest recesses of the respiratory tract. What the fullest measure of benefit from local medication will be remains for future clinical investigation to determine, but the successful introduction of medicinal agents into the air cells and alveoli is a crown-

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ing triumph of physical law, and marks a new and distinct era in the treatment of pulmonary disease.

The question naturally arises why medicines suspended in air would be carried more deeply into the lungs in the cabinet than out of it. The answer is a definite one, and depends upon well known physical and physiological laws. If the normal air be saturated with vapor, and then compressed, it will be found that it will not retain all its moisture but will deposit a portion of it. But the air which enters the lungs saturated with moisture is actually compressed at the moment of expiration. This compression, caused by the labored expiration and narrowing of the glottis, does deposit a certain proportion of the moisture carried in, upon the pulmonary mucous lining.

I am aware that this sketch is exceedingly imperfect. But in compressing so vast a subject within a twenty minute address it could not be otherwise. It will at least serve to place the subject before the Society for thought and discussion, and it is deserving of both.

I will be compelled to pass over the subject of clinical results thus far obtained with the briefest notice. My own results in seven cases have been encouraging. The best result was obtained in a case of unresolved pneumonia, of two years' standing. Three cases of phthisis have been greatly benefited; while two other advanced cases have received no benefit. The last case is too recent to report.

Much clinical work which has been done is now ready for the press. When this has been presented and placed side by side with that already published, I think it will justify the prediction that cases of phthisis pulmonalis have at last met "foemen worthy of their steel."

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TRANSACTIONS

OF THE

INDIANA STATE MEDICAL SOCIETY

AT THE

THIRTY-SIXTH ANNUAL SESSION.

FIRST DAY.

MORNING SESSION.

PLYMOUTH CHURCH, INDIANAPOLIS, IND.,
TUESDAY, May 11, 1886, 10 A. M.

The President—Gentlemen, the Indiana State Medical Society will now come to order, and our exercises will be opened by prayer, by the Rev. Dr. McLeod.

The meeting was opened by prayer from the Rev. Dr. McLeod.

The President—The calling of the roll will be omitted until after dinner in consequence of the probability of a large number arriving on the noon trains. The first thing is the appointment of the Committee on Credentials. The Secretary will announce their names.

The Secretary read the names as follows:

Committee on Credentials—C. N. Blount, J. D. Gatch, N. N. Shipman, William Scott and Peter Drayer.

The next in order will be the report of the Committee on Arrangements, Dr. J. H. Oliver, Chairman.

The report of the Committee on Arrangements was read by Dr. Oliver as follows:

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Mr. President and Members of the Indiana State Medical Society:

Your Committee on Arrangements desire to make the following report:

The usual reduction in railroad fare has been obtained and certificates sent to all applicants for same. Acting on the advice of members we made arrangements with but two of the leading hotels. A very liberal reduction was obtained in this manner. Your committee prepared a circular letter noting these arrangements, and mailed one to each member of the Society. The following is the bill of expenditures:

Rent of Plymouth building	$80 00	
Stamps	13 90	
Railroad certificates	6 00	
Envelopes	3 75	
Water coolers, ice, etc	3 00	
Printing 500 programmes	5 50	
Printing 1500 circular letters	6 50	
Expressage	35	
Decorations	6 00	
		$125 00

The whole amount expended by your committee, all of which is respectfully submitted.

G. V. Woollen, M. D.,
F. M. Ferree, M. D.,
John H. Oliver, M. D.,
John Chambers, M. D.,
L. L. Ford, M. D., *Committee.*

The President—Gentlemen, you have heard the report of the Committee on Arrangements; what is your pleasure in regard to it?

Dr. Hibberd—Mr. President, I move that the report be referred to the Committee on Finance.

The motion was carried.

The President—The Secretary will now announce the Committee on Finance.

The Secretary announced the following:

Committee on Finance—S. E. Munford, J. N. Parr, John Moffet, J. H. Woodburn, Wilson Hobbs.

The President—The next in order is the report of the Secretary, which he will now read.

The Secretary read his report as follows:

SECRETARY'S REPORT.

Indianapolis, Ind., May 11, 1886.

To the President and Members of the Indiana State Medical Society,
At its Thirty-sixth Annual Meeting:

For the sixth time I have the honor and pleasure to make you an annual report as your Secretary. At the time of the last meeting I had collected yearly dues from 875 members. Subsequently I succeeded in collecting from 224 addi-

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tional members, making a total of 1,109 members who paid their annual dues. I stated in my last years' report that "I think that the depressed financial condition of the country has operated adversely to the interests of the county societies." My surmise was correct as to the list of "delinquents," "dropped," and suspensions for "non-payment of dues," was larger than ever before in the history of the Society. Several counties, viz., Adams, Brown, Carroll, Daviess, Pulaski and Switzerland, made no report whatever. These facts, with the efforts that were made to enforce the laws of the State Society in regard to non-resident members, reduced the total paying membership 105 below that of the preceding year. Several of these societies are now in process of reorganization and have promised to send in their reports in time for this year's annual report. Two new societies were organized during the year, viz., Ripley county, with 15 members, and Warrick county, with 9 members. Blanks for the organization of new societies in Greene, Shelby, Sullivan and Clay counties are now in the hands of physicians living in those localities, and I confidently expect that some of them will organize in time for publication in the present year's Transactions.

The changes so far reported this year are:

Members	1065
Expelled	.....
Died	19
Removed	33
Withdrawn	13
Suspended	46
Reported new members and reinstated	143

Of whom dues have been paid by 924. So far I have received reports from 56 societies, leaving 12 yet to report. The reports from the societies so far are fuller than last year. I think that the number of members will again reach 1,200 paying ones.

As will be seen our necrological list this year is a long one. Death has played sad havoc with us, eighteen member's deaths already reported, and among them some of the most honored and faithful of our members. Harding, Vickrey, Stillson, Stevens, Haymond, Featherston, Weddington and others on that list have written their names on the pages of the medical history of our State.

For the first time in ten years the Secretary of this Society failed to attend the meeting of the American Medical Association, but from reports I learn that our State was fairly well represented. I issued credentials to 125 members of the State Society as delegates to the Amer. Med. Ass'n, and understand that a large number of them were present.

For the first time within my knowledge there is no business for the Ethical Committee at the Annual Meeting of the State Medical Society, no appeal cases having been referred to this meeting.

The utmost harmony now exists between the State Society and all her auxiliaries. A general interest in the welfare of the State Society and its auxiliaries is manifested among the members of the profession throughout the State, and it only requires the same earnest work upon the part of the individual members that has heretofore been so cheerfully given, to make our Society the principal factor

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in still elevating the standard, dignity and honor of the medical profession in Indiana. A glance at the work and influence in our State Legislature will at once satisfy the most incredulous.

1st. Our Society was the first to suggest a law legalizing dissections and providing anatomical material, and a member of this Society drafted and introduced and secured the passage of the act.

2d. Our Society first advocated a State Board of Health, and one of our members drafted the bill, introduced into the Senate and secured its enactment.

3d. For years our Society has advocated the passage of a law to raise the standard of medical practitioners in the State. At the last session of the General Assembly a member of this Society drafted and introduced the bill which became the present law upon that subject, so that in legislative as well as in professional and scientific progress, our State Medical Society is fully abreast of the age.

The order of the Society last year relative to sending in of papers designed for reading before the Society, has been instrumental in enabling the Committee of Arrangements to prepare a program which promises an interesting session. Attached herewith are financial exhibits of the accounts of the Society with the Secretary and Treasurer, and a bill of expenses incurred by the Secretary and Committee of Publication. Very Respectfully, E. S. ELDER, M. D., *Secretary.*

INDIANAPOLIS, May 4, 1886.

E. S. Elder, M. D., Secretary, in account with the Indiana State Medical Society for 1885:

Dr.	To dues from 1109 paying members	$1,109 00	
	To cash from exhibitors	25 00	
	To sale of Transactions	3 00	
			$1,137 00
Cr.	By cash to Treasurer	$1,109 00	
	By cash to Treasurer	25 00	
	By cash to Treasurer	3 00	
			$1,137 00

E. S. ELDER, M. D., *Secretary.*

Indiana State Medical Society in account with E. S. Elder, Secretary:

June, 1885.	To postage in sending notices to delinquents	$2 28	
	To postage in sending credentials A. M. Ass'n	2 64	
	To postage in sending R. R. circulars to A. M. Ass'n	1 30	
	Expressage paid on Trans. and books	3 85	
	Cash paid J. F. Hibberd, Committee on Necrology	5 00	
	Postage in connection with office	7 00	
	Telegraph dispatches	75	
	Paid for R. R. certificates	3 00	
	W. H. Roll, for rollers for certificates	1 50	
			$27 32

E. S. ELDER, *Secretary.*

Dr. E. S. Elder, Secretary, To Central Printing Co., Dr.

1885.			
June	2.	To 1000 envelopes	$2 50
"	2.	To 1000 letter heads	4 25
"	4.	To 500 cards	1 50
"	24.	To 1000 four page note circulars	7 00
"	4.	To 1500 note circulars (Ind. State Med. Soc.) different sizes.	5 95

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1886.			
March 15.	To 400 letter circulars (to Secretaries)	2 50	
	To 250 manilla envelopes, No. 9	1 65	
	To 250 manilla envelopes, No. 10	1 85	
	To 1000 No. 9 white envelopes	3 95	
" 16.	To 500 Annual reports	5 50	
" 21.	To 500 certificates A. M. Ass'n	2 25	
	To 250 letter circulars, A. M. Ass'n	2 25	
			$41 15

Received payment. CENTRAL PRINTING CO. J. W. CONNER.

$5.00 INDIANAPOLIS, IND., May 12, 1886.

Received of E. S. Elder, Secretary Indiana State Medical Society, five dollars in full of expenses as the Committee on Necrology of said Society.

JAS. F. HIBBERD, *Committee.*

Dr. E. S. Elder, To W. H. Roll, Dr.

1886. May 11. To 100 12 inch rollers for certificates $1 50

Received payment. W. H. ROLL.

Dr. E. S. Elder, to Wm. B. Burford, Dr.

1885. May 11.	Two balls of twine	$0 40	
1886. April 4.	Printing 1000 certificates of membership, fancy and gilt colors	12 50	
			$12 90

Received payment. WM. B. BURFORD.

On motion the report of the Secretary was referred to the Committee on Publication, and that part pertaining to finances was referred to the Committee on Finances.

The President—The next in order is the report of the Treasurer, Dr. Kemper.

Dr. Kemper read his report as follows:

TREASURER'S REPORT.

G. W. H. Kemper, M. D., Treasurer, in account with Ind. State Med. Society:

Dr.	May 11, 1886.	To balance from last year	$51 17	
	May 30, 1885.	To draft from Secretary	881 30	
	Aug. 15, 1885.	To draft from Secretary	151 15	
	May 7, 1886.	To draft from Secretary	104 55	
				$1,188 17
Cr.	By cash to W. B. Burford		$541 15	
	By cash to Committee on Arrangements		132 80	
	By cash to Secretary		100 00	
	By cash Secretary's bill		48 50	
	By cash to Chairman Publishing Committee		50 00	
	By cash short-hand reporter		60 00	
	By cash to Central Printing Co		25 00	
				$1,057 45
	By balance on hand			130 72
				$1,188 17

Respectfully submitted,

G. W. H. KEMPER, *Treasurer.*

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On motion the report of the Treasurer was referred to the Committee on Finance.

The President—The next in order is the report of the Committee on Publication, Dr. E. F. Hodges, Chairman.

Dr. Hodges read the report as follows:

REPORT OF COMMITTEE ON PUBLICATIONS.

Mr. President, and Gentlemen of the Indiana State Medical Society:

As Chairman of the Committee on Publications I have the honor to submit the following report: Opportunity was given to the various publishing houses in the city to bid for the work of publishing the Transactions for 1885. Six bids were received and that of W. B. Burford being the lowest and the house in every way reliable, the work was given to him.

The accompanying bill of particulars shows that for the 1400 copies ordered printed $641.15 was paid, being 45 cents and a fraction for each. The copies were distributed to members entitled thereto and moreover to medical societies, public libraries and government departments, to the number of 79. To foreign journals and libraries, 26, and to American medical journals, 28. Respectfully,

E. F. HODGES, *Chairman.*

INDIANAPOLIS, May 11, 1886.

Indiana State Medical Society, in account with Committee on Publications:

1885.	To postage on 79 copies of Transactions, sent to medical societies, public libraries, scientific associations and government departments	$9 48	
	To postage on 28 copies sent to medical journals	3 36	
	To postage on 26 copies sent to foreign journals and libraries and societies	2 76	
	To postage on 16 copies sent to private individuals	1 92	
			$17 52

Indiana Medical Society, to Wm. B. Burford, Dr.

1885.			
Oct. 10.	To postal cards	$1 50	
13.	1400 copies Transactions	615 00	
14.	25 lbs. hardware wrap	2 00	
	4 quires manilla wrap	1 20	
	24 hours wrapping and expressing	7 20	
17.	17 hours time making alterations	8 75	
22.	300 complimentary slips	1 25	
	300 shipping labels	1 25	
Dec. 18.	Binding 2 vols. Transactions	3 00	
			$641 15
	By cash		632 00
	To balance		$9 15
			$641 15

Paid May 11, 1886. WM. B. BURFORD.

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On motion the report of the Committee on Publication was referred to the Committee on Finance.

The Secretary—Mr. President, I have a matter that I wish to present to the Society. In January last I received the following letter from Waxahachie, Texas:

WAXAHACHIE, TEXAS.

Corresponding Secretary Indiana State Medical Society, Indianapolis, Ind.

DEAR SIRS: I have in possession a file of the Indiana State Medical Society from its organization (1849) to 1857. And until my permanent removal from the State, a devoted member, have returned this souvenir through all the vicissitudes of an eventful life, yet engaged in my beloved profession; the goal of my *final retirement* in sight; if needed would gladly bestow it, as a probably last contribution to the honored society, with the esteemed members of which in earlier and brighter periods so many pleasant reunions have been enjoyed. Since that time how many devoted and respected members have gone to their final rest! especially those of the organization, an institution of near half a century. THOS. W. FLORER.

I answered him at once and indicated that the gift would be very acceptable. I will read you the letter accompanying the gift.

WAXAHACHIE, ELLIS COUNTY, TEXAS, 4th Mo. 6th, 1886.

To the Members of the Indiana State Medical Society:

BRETHREN: Through your honored Secretary I herewith transmit a file of proceedings of your society from date of organization to the year 1857.

A treasured relict of bygone days, advised by dates, if not by infirmity, I am aware it must soon pass into other hands. I consign it to the "love of my youth," trusting that it may be of some service to your respected institution.

As one who from boyhood has been in the harness caring for and cherishing our noble profession above all else, and as one who hopes to die on the field, face to the enemy, I bid you Godspeed.

Most respectfully, T. W. FLORER, M. D.

Dr. Hobbs—Mr. President, I move that the Secretary be instructed to make an official acceptance of this gift, and to present to the Doctor the thanks of this Society for the same.

Dr. Munford—Mr. President, I move as an amendment that Dr. Florer be made an honorary member of this Society.

Dr. Hobbs—I accept the amendment.

Dr. Moffet—Mr. President, I have wondered for a long time where Dr. Florer had gone. In the winter of 1848 and 1849 we attended the Ohio State Medical College, and, among other things, I recall an incident that occurred at that time. I had a friend who

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was going to make a dissection of a human body, and in the preparation of the body Dr. Florer was present. A portion of the material used for injection got on fire, and we had on that occasion a test of our manhood and our courage in extinguishing it. I saw then displayed the courage of Dr. Florer, and I want to say to this Society that he was, as he states in his communication to you, a devotee of the medical profession. It was his first and last thought, and I can vote to make him an honorary member of this Society most cheerfully, knowing him as I do, to have been one of the first standard bearers of the medical profession in the southern part of the state.

The motion, as amended, was carried unanimously.

The Secretary—Mr. President, I have the following communication from Dr. W. B. Fletcher, of the Indiana State Hospital for the Insane:

INDIANAPOLIS, IND., May 11, 1886.

To the President of the Indiana State Medical Society.

DEAR SIR: Through you I desire to extend a cordial invitation to the Society to visit the State Hospital for Insane—as a body, and will furnish a hall for a half day's session, if it will be acceptable, and thus prevent haste in the visit. Should this invitation be accepted I will furnish street car transportation at any hour selected. At all hours our doors will be open to the members of the Society who desire to call individually. Respectfully Yours.

W. B. FLETCHER.

On motion the consideration of this communication was referred to the close of the afternoon session.

The President—If there is no objection we will now hear the report of the Committee on Necrology by Dr. Hibberd.

Dr. Hibberd read the report as follows:

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In Memoriam.

1886.

ORIN ABORN, M. D.
JAMES K. BIGELOW, M. D.
JOHN A. COWAN, M. D.
SAMUEL DAVIS, M. D.
A. F. DAYHUFF, M. D.
JOHN R. FEATHERSTON, M. D.
THOMAS GIFFORD, M. D.
MYRON HOLLY HARDING, M. D.
WILLIAM SUMMERVILLE HAYMOND, M. D.
CHARLES S. JOHNSON, M. D.
JOSEPH H. LEATHERMAN, M. D.
JESSE D. McCLURE, M. D.
JOHN H. L. MARTIN, M. D.
CARL F. MAYER, M. D.
DAVID B. MONTGOMERY, M. D.
R. N. PHILLIPS, M. D.
JOHN WESLEY POSEY, M. D.
THADDEUS M. STEVENS, M. D.
JOSEPH STEVENSON, M. D.
JOSEPH STILLSON, M. D.
GEORGE SUTTON, M. D.
WILLIAM H. TERRILL, M. D.
ABSOLOM M. VICKREY, M. D.
SAMUEL C. WEDDINGTON, M. D.
ROBERT WINTON, M. D.

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REPORT OF COMMITTEE ON NECROLOGY.

Mr. President:

An unusually large number of our brethren have passed out from the living since our last convocation. My list herewith presented numbers eighteen, four of them from Marion county, two from Pike, and one each from Clark, Dearborn, Delaware, Fountain, Franklin, Howard, Lawrence, Madison, Porter, Posey, Tipton, and Warren. I was notified of the death of S. C. Weddington, of Grant, and promised an obituary, but it has not come to hand.

One of those from Pike county should have been reported two years ago, and the other should have been in the list for last year. They are now both inserted to complete our necrological record.

Beside the returns from the fourteen counties having deceased members as above, I received replies to my postal asking for information from twenty other counties, each stating that no death had occurred among the members of the Society for which the reply was made. And there were thirty counties in which the party to whom the postal was addressed paid no attention to it, and as no other person vouchsafed information in the premises, your committee has no knowledge whether deaths occurred therein or not, but presume that there were none.

Your committee respectfully repeats the annual regret that all parties to whom these postal inquiries are addressed, do not feel enough interest in the fullness of this yearly report to reply in some shape to its simple request. The obituaries submitted are arranged chronologically as regards the time of the death of the parties noticed.

Respectfully submitted,

May 11, 1886. JAS. F. HIBBERD, *Committee.*

POST REPORT.

During the session of the State Society the committee was notified of the death of three members in addition to the eighteen reported above, viz.: in Dearborn and Howard counties a second death each, and in DeKalb county one. Obituaries of these members have been furnished your committee, and they have been placed in the list in proper chronological order. No particulars of the death of Dr. S. C. Weddington had been received at the time of closing this post report.

May 26. J. F. H., *Committee.*

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A. F. DAYHUFF, M. D.,

MEMBER OF HOWARD COUNTY MEDICAL SOCIETY.

BORN ——— 1827,

IN ORANGE COUNTY, INDIANA:

DIED JULY —, 1884,

AT KOKOMO, INDIANA.

He obtained his general education at the Indiana State University, studied medicine with Dr. William Sherrod, of Paoli, and attended lectures in Rush Medical College, Chicago. In 1853 he settled in Kokomo, Indiana, and continued there in practice until his demise. No man in Howard county more thoroughly engrafted a good name in the memories of his fellow citizens than did Dr. Dayhuff. His indomitable zeal and energy were leading characteristics of his life, and were such as to leave no opportunity unimproved to store his mind with useful knowledge that would assist him in the duties of his calling.

Dr. Dayhuff was one of the charter members of the Howard County Medical Society, assisted in its reorganization in 1854, and continued in active relation up to the time of his death.

In 1855 he married Miss Addie Frazier, of New Albany, Ind., who is now also dead, and their tombs are side by side in the beautiful cemetery at Kokomo.

[Prepared by J. McL. Moulder, M. D., Kokomo, Ind.]

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JOHN WESLEY POSEY, M. D.,

MEMBER OF PIKE COUNTY MEDICAL SOCIETY.

BORN APRIL 10, 1801,

IN SOUTH CAROLINA.

DIED AUGUST 10, 1884,

AT PETERSBURG, INDIANA.

Coming to the then territory of Indiana when but four years of age his opportunity for an education was meager, but he was a close student all his life, and mastered thoroughly whatever studies he engaged in.

Dr. Posey read medicine under Dr. Burnside in Liberty, and received his diploma from the Wabash Valley Medical Society in 1825; a Society organized under the presidency of Willis Hill, M. D., to examine and qualify physicians and surgeons.

He retired from practice of medicine as a vocation in 1855, devoting himself to agriculture and horticulture, for which he always had a fondness. During the late war, although quite aged, he volunteered service in times of necessity; was in the Marine Hospital at Evansville, and went to the front after the battle of Shiloh, and had temporary direction of a field hospital, and at home until his death would answer calls for consultation and assist at surgical operations.

Dr. Posey was a member of the M. E. Church from early manhood, and a life-long opponent of the evils of intemperance and human slavery.

[Prepared by A. R Byers, M. D., R. R. Kime, M. D., C. H. Fullinwider, M. D., *Committee.*]

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CARL F. MAYER, M. D.,

MEMBER OF ALLEN COUNTY MEDICAL SOCIETY.

BORN JANUARY 12, 1830,

AT NEIDLINGER, GERMANY.

DIED JANUARY 15, 1885,

IN KIRCHHEIM, GERMANY.

Dr. Mayer graduated at Tuebingen, and became Surgeon of the Seventh Regiment Infantry at Ulm, Germany. He came to this country in 1857, and practiced for some time at Whitehall, Ind., then in Adams county, but settled in Fort Wayne, where he practiced for twenty-three years. On the 7th of July, 1884, he started on his return to Germany for the restoration of his health.

Dr. Mayer was first married to Louise Bessner, who died in 1873, leaving four children, and in 1874 he married Elizabeth Bleke.

Dr. Carl F. Mayer was one of the oldest and most respected members of the Allen County Medical Society. Guided by honor, integrity, and the code of ethics, he devoted his life to the profession he loved so well.

[Prepared by I. M. Rosenthal, M. D., Fort Wayne, Ind.]

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R. N. PHILLIPS, M. D.,

MEMBER OF PIKE COUNTY MEDICAL SOCIETY.

BORN FEBRUARY 11, 1822,

AT GIBSON COUNTY, INDIANA.

DIED MARCH 9, 1885,

IN UNION, INDIANA.

Dr. Phillips' chance for an education was limited, but he early developed a love for books, reading all within his reach, and among these was a medical work, which gave him a taste for medical knowledge; but he did not begin to study for the profession until 1853, when he entered the Evansville Medical College.

He began practice at West Buena Vista, Ind., in 1854, and in November, 1865, went to Lincoln, Ill., and continued practice until August, 1872, when he returned to his native state and settled in Union, Pike county, where, in connection with his practice, he conducted a drug store until his death.

[Prepared by a committee consisting of A. R. Byers, M. D.; R. R. Kime, M. D.; C. H. Fullinwider, M. D.]

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THOMAS GIFFORD, M. D.,

MEMBER OF FRANKLIN COUNTY MEDICAL SOCIETY.

BORN DECEMBER 16, 1816,

AT PEN YAN, NEW YORK.

DIED JUNE 14, 1885,

IN LAUREL, INDIANA.

He came to Dearborn county in 1817, and was left an orphan when four years old. He lived with an uncle until he was seventeen years old, and then provided for himself. He made the best of his opportunities, but his general education was limited. He was a diligent student in medicine, graduated in the Medical College of Ohio, and had the largest medical library in Franklin county. He began practice in Laurel in 1841, and continued there until his death, doing a large and laborious business until stricken with paralysis in January, 1884. He was accounted a superior diagnostician, but was somewhat heteradox as a therapeutist.

Dr. Gifford was four times elected to the Indiana legislature, twice to the Lower House and twice to the Senate.

He was married in 1842, to Catherine Case, by whom he had nine children, seven of whom, with their mother, survive.

He was a member of the County, District and State Medical Societies.

[Prepared by Henry G. Averdick, M. D., Oldenburg, Indiana.]

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JOHN A. COWAN, M. D.,

MEMBER OE DEKALB COUNTY MEDICAL SOCIETY.

BORN MARCH 1, 1843,

IN DECATUR, INDIANA.

DIED JUNE, 18, 1885,

AT AUBURN, INDIANA.

Dr. Cowan enlisted in the 89th Indiana Infantry, in August, 1862, and served in the army for the preservation of the Union until the close of the war; was slightly wounded twice and taken prisoner three times.

He died at the early age of forty-two years, from the result of disease contracted while in the service. The DeKalb County Medical Society lost by his death one of its founders and the first secretary of the organization.

Dr. Cowan was a graduate of the Detroit Medical College, class of 1869.

[Prepared by Vesta M. Swarts, M. D.]

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ROBERT WINTON, M. D.,

MEMBER OF DELAWARE COUNTY MEDICAL SOCIETY.

BORN NOVEMBER 14, 1820,

IN ROSSVILLE, OHIO.

DIED JULY 30, 1885,

AT MUNCIE, INDIANA.

Dr. Winton began the practice of medicine at Wheeling, Indiana, in the year 1846. The winter of 1855 he attended a course of lectures at Rush Medical College, Chicago, Ill., and graduated the following spring. In the fall of 1856 he removed to Muncie and engaged in his profession and continued in an active and laborious practice until his death.

He assisted in the formation of the Delaware County Medical Society, in June, 1865, and in 1866 in the reorganization of the State Medical Society into a delegated body. He was also a member of the American Medical Association.

Dr. Winton was an elder in the Presbyterian church, and lived and died a Christian gentleman. He was alive to all the public interests of his community, and his death was universally deplored and mourned.

[Prepared by G. W. H. Kemper, M. D., Muncie, Ind.]

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ORIN ABORN, M. D.,

MEMBER OF WARREN COUNTY MEDICAL SOCIETY.

BORN AUGUST 20, 1826,

AT LINCOLN, VERMONT.

DIED AUGUST 5, 1885,

IN MARSHFIELD, INDIANA.

Orin Aborn received his general education in Oberlin College, Ohio, and began the study of medicine in 1851 in the office of Drs. Taliaferro and Buckner, Cincinnati, and graduated in the Medical Department of Michigan. He settled for practice in Warren county, Indiana, and continued there until his death.

Dr. Aborn was assistant surgeon of the 40th Regiment Indiana Volunteers during the late war, and while in the service had an attack of measles from the effects of which he never entirely recovered.

One of his accomplishments was a knowledge of astronomy, from which he derived great enjoyment. In his younger days he doubted some of the essential doctrines of evangelical religion, but later in life he made public profession of his hope of salvation through Christ. He was of a domestic disposition and temperate, devoted to his profession and his home.

March 26, 1857, he was married to Mary J. McAlilly, of Williamsport, whom he left a widow.

[Prepared by J. Ross, M. D., Williamsport, Ind.]

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DAVID B. MONTGOMERY, M. D.,

MEMBER OF POSEY COUNTY MEDICAL SOCIETY.

BORN MARCH 26, 1834,

AT GIBSON COUNTY, INDIANA.

DIED SEPTEMBER 1, 1885,

IN CYNTHIANA, INDIANA.

Dr. Montgomery graduated at Rush Medical College, Chicago in Fel ruary, 1858, and in March following located in Cynthiana, where he remained until his death.

[Prepared by S. H. Pearse, M. D., Mt. Vernon, Ind.]

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JOSEPH STILLSON, M. D.,

MEMBER OF LAWRENCE COUNTY MEDICAL SOCIETY.

BORN AUGUST 8, 1815,

AT NEWTOWN, CONNECTICUT.

DIED SEPTEMBER 15, 1885,

IN BEDFORD, INDIANA.

After obtaining a good general education in the East, he came to Bedford in 1836 and taught school, and at the same time pursued his medical studies with the late Dr. Foote. In 1839 he attended medical lectures in the University of Louisville, and in 1840 began practice in Nashville, Brown Co., Ind., and while there was admitted to the bar, and was afterward admitted to the Lawrence county bar. In 1840 he settled in Harrodsburg, but in 1841 he returned to Bedford and remained there until his death.

Dr. Stillson did a laborious practice, but ever kept abreast with his confreres in the study of the advancing science of medicine. He was a member of the Lawrence County Medical Society, the State Medical Society, and the American Medical Association. He was devoted to the interests of education and was active in all local enterprises of this kind.

In 1840 he married Miss Eliza Reddick, who, with two sons and two daughters, survive him. He was a member of the Christian Church.

[Prepared by "V," Bedford, Ind.]

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MYRON HOLLY HARDING, M. D.,

MEMBER OF DEARBORN COUNTY MEDICAL SOCIETY.

BORN AUGUST 10, 1810,

AT WILLIAMSON, NEW YORK.

DIED SEPTEMBER 18, 1883,

IN LAWRENCEBURG, INDIANA.

While quite young the parents of Dr. Harding left the State of New York and came into Indiana at a time when educational facilities were scant. The necessities of labor in assisting to open a farm in the primeval forests of Ripley county, gave him a physical training far superior to his mental cultivation, but a naturally good mind found both means and opportunity for its own culture, and in the end Dr. Harding was one of the best informed young men of the society in which he moved. At the age of 18 he was a school teacher, at 20 he began the study of medicine with Dr. Cornett, of Versailles, and graduated in the Medical College of Ohio in 1837. Dr. Harding was an active and popular practitioner, a member of his County and State Medical Societies and of the American Medical Association, to all of which he contributed scientific papers of value. He was for the last 21 years a member of the M. E. Church. He was twice married, in 1838 to Miss Lucy S. Plummer, who bore him 3 sons and 3 daughters, and died in 1864. His second marriage was to Mrs. Mary Ann Hill, who survives him.

[Prepared by S. H. Collins, M. D., Lawrenceburg, Ind.]

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JESSE D. McCLURE, M. D.,

MEMBER OF CLARK COUNTY MEDICAL SOCIETY.

BORN DECEMBER 2, 1855,

AT NEW FRANKFORT, INDIANA.

DIED SEPTEMBER 29, 1885,

IN JEFFERSONVILLE, INDIANA.

He was the third son of Dr. David McClure, one of the best known physicians of southern Indiana.

On the 20th of February, 1884, he graduated at the Louisville School of Pharmacy, receiving the gold medal for second honor, and afterwards graduated at the Louisville Medical College, where he also received a gold medal for general efficiency.

For several years he served as hospital steward at the Indiana State Prison South, and for some time previous to his death was assistant physician to the same institution. He was a member of the Clark County Medical Society, and a young physician of great promise.

[Prepared by I. N. Ruddell, M. D., Jeffersonville, Ind.]

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THADDEUS M. STEVENS, M. D.,

MEMBER OF MARION COUNTY MEDICAL SOCIETY.

BORN AUGUST 29, 1829,

IN INDIANAPOLIS, INDIANA.

DIED NOVEMBER 8, 1885,

IN INDIANAPOLIS, INDIANA.

Dr. Stevens was educated in the private schools of his native city, studied medicine with Dr. Bobbs and was an alumnus of both the Indiana Medical and the Jefferson Medical College, Philadelphia.

In 1870 he was Professor of Toxicology, Medical Jurisprudence and Chemistry in the Indiana Medical College, and in 1874 occupied the same chair in the College of Physicians and Surgeons.

His taste was rather for medical literature than practice. At one time he edited the *Indiana Medical Journal*, and his pen was always ready for the leading medical subjects. For the last ten years he devoted himself to State medicine, and he was largely influential in the establishment of the State Board of Health, of which he was the first secretary and executive officer. And his last effort for the public good was to establish a State Hospital for the benefit of the sick poor.

He was a member of the County, State and Tri-States Medical Societies, and of the American Medical, and American Public Health Associations. He was a warm friend of the younger members of the profession and favored the idea of promoting a younger class of men to the honorable positions in medical organizations. Dr. Stevens left a wife and two young sons to mourn his death.

[Prepared by Mrs. Thad. M. Stevens, Indianapolis, Ind.]

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JOHN H. L. MARTIN, M. D.,

MEMBER OF HOWARD COUNTY MEDICAL SOCIETY.

BORN MAY 7, 1850,

IN HUMMELSTOWN, PENNSYLVANIA.

DIED NOVEMBER 10, 1885,

AT ARCADIA, INDIANA.

He was the oldest son of Dr. J. W. Martin, of Erwin, Ind. He received his education in the common schools of Howard county, Ind. He taught several terms of school before commencing the study of medicine.

He began the study of medicine with his father at Erwin, but completed his course of reading with the late H. C. Cale, of Kokomo. He graduated at the Medical College of Indiana in 1880, and practiced with his father at Erwin one year, and then removed to Arcadia, where he enjoyed a good practice until his death.

[Prepared by J. W. Wright, M. D., Kokomo, Ind.]

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CHARLES S. JOHNSON, M. D.,

MEMBER OF FOUNTAIN COUNTY MEDICAL SOCIETY.

BORN SEPTEMBER 14, 1824,

IN , OHIO.

DIED NOVEMBER 21, 1885,

IN FOUNTAIN COUNTY, INDIANA.

At three years of age he came to Fountain county with his parents. He began the practice of medicine in the Territory of Oregon in 1849. He resided several years on the Pacific coast, returning by the way of Panama and the West India Islands. From 1860 to 1866 he practiced medicine in Missouri, during which time he attended lectures in Kansas City.

In 1856 he was married to Sarah E. McLean, of Rob Roy, Ind., who, with a daughter, survives him.

[Prepared by G. S. Jones, M. D., Covington, Ind.]

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WILLIAM H. TERRILL, M. D.,

HONORARY MEMBER OF DEARBORN COUNTY MEDICAL SOCIETY.

BORN 1829,

IN BOONE COUNTY, KENTUCKY.

DIED NOVEMBER —, 1885,

AT PETERSBURG, KENTUCKY.

Dr. Terrill graduated at the University of Virginia in 1850, and began practice at Aurora, Indiana; soon removed to Moore's Hill, and subsequently established himself in Manchester, Indiana, where he continued until he became a soldier in the late war.

During the war Dr. Terrill warmly espoused the cause of the Union and entered its service as Captain of Company F 16th Indiana Volunteers, Mounted Infantry. At the close of the war he located in Petersburg, Kentucky, and there continued in practice until his death, the senior practitioner of Boone county, loved, honored and respected.

Dr. Terrill was made an honorary member of the Dearborn County Medical Society at its reorganization in 1867, and, until prevented by his last illness, was one of the society's most active and constant members, and he was also a member of the American Medical Association.

As a man he will ever be remembered as a kindly, courteous and Christian gentleman.

[Prepared by S. H. Collins, M. D., Lawrenceburg, Ind.]

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WILLIAM SUMMERVILLE HAYMOND, M. D.,

MEMBER OF MARION COUNTY MEDICAL SOCIETY.

BORN FEBRUARY 23, 1823,

IN HARRISON COUNTY, WEST VIRGINIA.

DIED DECEMBER 24, 1885,

IN INDIANAPOLIS, INDIANA.

Being very studious he acquired a thorough education before he commenced the study of medicine, which he did in Clarksburg, West Virginia; came West in 1851 and settled in Monticello, Indiana, where he practiced his profession. Graduated in the Medical College of Ohio in 1859, and in 1872 in Bellevue Hospital Medical College, New York.

In the fall of 1861 he went into the army as Assistant Surgeon of the 46th Indiana Volunteers, where his labors were so hard that he broke down from disease and never recovered his health, in fact dying from disease contracted at that time.

In the spring of 1877 Dr. Haymond located in Indianapolis, devoting himself to practice, and in 1879 was elected to the chair of surgery in the Central College of Physicians and Surgeons, Indianapolis, which he continued to hold until his death.

He married Mary M. Smith in Monticello, in December, 1853, who survives him.

He was a member of the Methodist church for many years preceding his death, and in all the relations of life he was modest, unassuming and courteous, ever ready to help all that needed his assistance.

[Prepared by Mrs. W. S. Haymond, Indianapolis, Ind.]

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ABSALOM M. VICKREY, M. D.,

MEMBER OF TIPTON COUNTY MEDICAL SOCIETY.

BORN FEBRUARY 10, 1822,

AT MILTON, INDIANA.

DIED FEBRUARY 11, 1886,

AT TIPTON, INDIANA.

He received his literary education in Spiceland, Ind., and before he reached his majority he had served an apprenticeship as a tanner. He studied medicine with Drs. Ragen & Ardre in Hope, graduated at the Medical College of Ohio in 1867, and at Bellevue Hospital Medical College, New York, in 1874. He began practice in Bethlehem, but soon removed to Boxleytown, and in 1852 settled in Tipton, where he remained. He took an active interest in county affairs, helped to start the *Tipton Times* in 1856, and in 1873 founded a private bank. In 1884 he was a member of the Indiana Legislature, serving with distinction in the Lower House.

Dr. Vickrey was Worshipful Master of Austin Lodge F. & A. M. for many years, was a member of the Tipton County and State Medical Societies.

Dr. Vickrey was married to Miss Hannah Burton, by whom he had two daughters, both of whom with the widow survive.

[Prepared by A. S. Dickey, M. D., Tipton Ind.]

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JOSEPH STEPHENSON, M. D.,

MEMBER OF MADISON COUNTY MEDICAL SOCIETY.

BORN APRIL 19, 1819,

IN WARREN COUNTY, OHIO.

DIED MARCH 16, 1886,

IN PENDLETON, INDIANA.

While quite young his father moved from Ohio and settled on a farm near Anderson, Ind., and Dr. Stephenson lived and worked with his father until grown, meanwhile obtaining such education as the common schools afforded.

He began the study of medicine with Dr. Joseph H. Cook, of Pendleton, Ind., and graduated in the Medical College of Ohio in 1850, and practiced medicine uninterruptedly until his death, which was caused by some obscure disease of the brain after some days of unconsciousness.

Dr. Stephenson was devoted to his profession, which he practiced with diligence and success, obtaining a competence from his earnings some years before his death, making friends and retaining them throughout his career, and died respected by all who knew him.

In 1850 Dr. Stephenson married Miss Josephine Boston, by whom he had six children, the mother and children now all lamenting his death.

He was a member of the County and State Societies, and for many years before his death was a consistent member of the Methodist E. Church.

[Prepared by Ward Cook, M. D., Pendleton, Ind.]

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JOSEPH H. LEATHERMAN, M. D.,

MEMBER OF PORTER COUNTY MEDICAL SOCIETY.

BORN MARCH 4, 1819,

IN WASHINGTON COUNTY, PENNSYLVANIA.

DIED MARCH 22, 1886,

IN VALPARAISO, INDIANA.

Dr. Leatherman, in his tenth year, entered Jefferson College, Cannonsburgh, Pa., and prosecuted his studies into his Senior year. He studied medicine with his uncle, Dr. Jonathan Leatherman, and graduated in Jefferson Medical College in 1843. He practiced for a year in his native county, but in 1844 removed to the territory of Iowa, where, March 2, 1848, he was married, and in 1853, induced by the ties of kindred, he removed to Valparaiso. He was a careful and successful practitioner, had the respect of his professional associates, and the confidence and esteem of his neighbors.

Dr. Leatherman was county coroner for some years, a member of the Porter County Medical Society, and of the Presbyterian church. A wife and seven children survive him.

[Prepared by James F. McCarthy, M. D., Valparaiso, Ind.]

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JOHN R. FEATHERSTON, M. D.,

MEMBER OF MARION COUNTY MEDICAL SOCIETY.

BORN OCTOBER 6, 1841,

AT LEXINGTON, KENTUCKY.

DIED APRIL 13, 1886,

IN INDIANAPOLIS, INDIANA.

Dr. Featherston studied medicine with Dr. J. M. Rice, near Lexington, and graduated in the Medical College of Ohio in 1865, and during the same year was Acting Surgeon at the Army Hospital, Camp Nelson, Ky., and in the following year located in Indianapolis, where he remained until his death.

In 1879 he was one of the founders of the Central College of Physicians and Surgeons, and for two years occupied the chair of Physiology and Clinical Medicine. Although an active practitioner of medicine, he was an ardent art student, and his happiest hours were when he was engaged in microscopical investigation.

Dr. Featherston was a man of positive characteristics, a warm and devoted friend, a sharp and sometimes apparently severe enemy, but under all circumstances a courteous gentleman, a dutiful husband and a kind father.

[Prepared by S. E. Earp, M. D., Indianapolis, Ind.]

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SAMUEL DAVIS, M. D.,

MEMBER OF MARION COUNTY MEDICAL SOCIETY.

BORN FEBRUARY 15, 1814,

AT PHELPS, NEW YORK.

DIED APRIL 15, 1886,

IN INDIANAPOLIS, INDIANA.

He obtained his general education at Oberlin College, Ohio, and in 1834 went to Cincinnati, teaching a colored school at the old Baptist church and attending medical lectures. In 1838 he began practice in New Trenton, Ind., and graduated in the Medical College of Ohio in 1847.

In 1862 he was Assistant Surgeon of the 37th Indiana Volunteers, and in 1863 Surgeon of the 83rd Indiana Volunteers. While in the latter service he was thrown from an ambulance, injuring his spine, from which he never entirely recovered.

In 1872 he removed to Indianapolis, and at the time of his death was medical director of the Masonic Mutual Benefit Society.

Dr. Davis was a member of the lower house of the Indiana legislature in 1852.

He was twice married, his second wife dying two months before his own death; four children by his first wife survive him.

[Prepared by Miss Estella N. Davis, Indianapolis, Ind.]

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SAMUEL C. WEDDINGTON, M. D.,

MEMBER OF GRANT COUNTY MEDICAL SOCIETY.

BORN JULY 15, 1823,

IN ROWAN COUNTY, NORTH CAROLINA.

DIED APRIL 25, 1886,

AT JONESBORO, INDIANA.

He removed to Indiana with his parents in 1832. Studied medicine at Alexandria, Ind., with Drs Spencer & Perry, and in 1847 was licensed to practice by a Board of Examiners, opening an office in Chesterfield, Ind., and in 1879 graduated in the Medical College of Indiana.

Dr. Weddington was Assistant Surgeon of the 147th Regiment Indiana Volunteers, and after his return from the army settled in Jonesboro in 1866. He was a frequent contributor to the medical journals as well as other scientific publications. He was a diligent student of medicine, keeping himself fully abreast with its constant advances. He was a member of the Delaware District Medical Society, and at the time of his death was Secretary of the Grant County Medical Society.

As a physician he was watchful, attentive and sympathizing; as a man, honest and upright in all relations; and is mourned by all classes as the friend of every deserving person and legitimate enterprise.

Dr. Weddington left a wife and five children.

[Prepared by Drs. J. C. Knight and S. S. Home, Jonesboro, Ind.]

[This obituary was handed in after the Post-Report of the Committee on Necrology was received.]

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JAMES K. BIGELOW, M. D.,

MEMBER OF MARION COUNTY MEDICAL SOCIETY.

BORN OCTOBER 17, 1833,

AT BELLEBROOK, OHIO.

DIED JUNE 1, 1886,

IN INDIANAPOLIS, INDIANA.

The deceased received his general schooling at Pleasant Valley, Ohio, and in 1847, with his parents, settled in Huntington county, Ind., and for two years aided in opening up a farm in the forest. Then for two years he was a clerk in a dry goods store, at the end of which time he began the study of medicine with Dr. W. L. Wickersham, of Anderson, Ind., and when it was concluded, practiced for awhile with his preceptor, then in Camden, Ind., and then in Jonesboro. When the Governor called for three months' volunteers in 1861, he volunteered as a private, and at the end of this term re-enlisted, was made hospital steward, and did duty as surgeon at the battle of Pea Ridge. Was commissioned as Assistant Surgeon October, 1862, and as Surgeon June, 1863. In January, 1864, he wrote and published a history of the Eighth Indiana Volunteers. On the 25th May, 1866, he was commissioned Lieutenant Colonel, the only Indiana Surgeon so commissioned. At the close of the war he was appointed Pension Examiner, and served in that capacity until his death.

Dr. Bigelow practiced in partnership with Dr. Todd, in Indianapolis, from 1865 to 1878. His health failing, he was unable to practice for several years, and in 1883 went with the Knights Templar to California in the double character of Knight and Surgeon.

Beside being a Mason of the 32°, Dr. Bigelow was an Odd Fellow, a Red Man, and belonged to the Order of Chosen Friends. He was a member of the Christian Church, and was one of the most self-sacrificing, liberal-minded and companionable of men.

He was thrice married, his first wife being Miss Minerva Ward; after her death, while home on a furlough, he married her sister, Miss Ada Ward, but rejoined his division one week after his marriage to her, soon after which she died. On June 3, 1865, he married Mrs. Vail, a widow at Keokuk, Iowa, by whom he had two daughters. His widow and daughters survive him.

[Prepared by F. M. Ferree, M. D., Indianapolis, Ind.]

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GEORGE SUTTON, M. D.,

MEMBER OF DEARBORN COUNTY MEDICAL SOCIETY.

BORN JUNE 16, 1812,

IN LONDON, ENGLAND.

DIED JUNE 13, 1886,

AT AURORA, INDIANA.

In 1819 Dr. Sutton came to the United States with his parents, who stopped for a short time in Cincinnati, and then settled on a farm in Franklin county, Indiana. After obtaining an education in Miami University he studied medicine under the private instruction, first of Prof. John Eberle and subsequently of Prof. S. D. Gross, and took his degree in the Medical College of Ohio in 1836. In May, 1836, he began practice in Aurora and continued there until his death.

June 7, 1838, Dr. Sutton married Miss Sarah Folbre, who bore him four sons and a daughter, the daughter and one son only survive.

He has been president of the County and State Medical Societies, of the Rocky Mountain Medical Association, a member of the American Medical Association and a number of other professional and scientific organizations; was president of the Board of Trustees of the College of Physicians and Surgeons of Indiana, was Mayor of Aurora for three successive terms, a member of the Board of School Trustees for sixteen years, and filled various other responsible positions, and in every one of them was an exceptionally faithful and efficient officer.

Dr. Sutton was a close observer, had a logical mind, and was full of untiring and intelligent industry. His writings, professional and scientific, have been more abundant and more important than those of any other physician in Indiana. It is impossible to even enumerate them in my allotted space, which is now full.

[Prepared from a notice in the *Dearborn Independent*, by J. F. H.]

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On motion the report of the committee was referred to the Committee on Publication.

The President—Gentlemen, we have been progressing very satisfactorily with our preliminary business, and we are now ready to commence our regular scientific work.

Dr. Hobbs—Before we begin that work I desire to move that the President be requested to note carefully the time of each one who presents a paper, and at the end of the limit allowed by law that the reader be called down if it splits a word, and also that there be no extension of time.

The President—If the society is satisfied I will accept that as my instructions in this matter, and will enforce the regulation which confines the reading of each paper to twenty minutes.

Dr. Boyd—Mr. President, I move that in the discussion of papers the speeches be limited to five minutes each.

Dr. Haughton—Mr. President, I have simply to say that I think to limit the speeches to five minutes will detract from the interest of the meeting. I think we find more of value in the discussions than we do in the papers, and I beg to object simply as an individual. If you will make it eight or ten minutes I have nothing to say.

Dr. Boyd—Mr. President, we do not want to limit the amount of discussion, but this motion is to limit the time so that one man will not occupy all the time on one question. It is an advantage to hear from as many members as possible. If we can not say what we have to say in five minutes we had better not get up. We want the cream of what each one thinks and no more. The motion was carried.

Dr. Harvey—Mr. President and gentlemen: I have the pleasure of introducing to you Dr. J. L. Barrett, of Iowa. He does not come as a delegate; but he commenced the study of medicine in this city and he comes to you as an old friend.

On motion Dr. Barrett was invited to participate in the proceedings of the meeting, and also invited to take a seat on the platform.

The President—Gentlemen of the Society: I will again introduce to you Dr. Barrett, who will now address you.

Dr. Barrett—Mr. President and gentlemen: For several reasons

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I am not in a condition to say much to you this morning. It has put me in somewhat of a mesmeric state to see the mighty improvement in your country at present, and to contrast it with the condition it was in when I left it. I remember our little medical society, then embracing the counties of Hamilton, Madison, Delaware, Marion, and probably some others, and I can recollect of riding seventy miles to New Castle, through the mud to get to the meetings which we held there annually. I left the state in 1848 and afterwards settled in Iowa, where I am now. We have no law there regulating the practice of medicine, as you have here, and being surrounded by states that have passed such laws, there has been within the last two years an exodus of two thousand doctors from those states to Iowa. I am glad to have met you, and I thank you for your kindness.

The President—The first paper on the programme is entitled "Some Remarks on the Relation and Duties of the Physician to the Public," by J. W. Milan, of Bruceville. Dr. Milan is not here, nor is Dr. Bell, of Indianapolis, who has the next place on the programme.

On motion, those persons who were assigned to duty and were not present at the time specified by the programme, were placed at the end of the programme.

Dr. Hobbs—I have a paper, Mr. President, which was arranged for this afternoon, when I can not be present. If it is the pleasure of the Society I will read it now.

The President—We will then hear Dr. Hobbs, subject "Diabetes Mellitus, with cases."

Dr. Hobbs read his paper.

The paper was discussed, and on motion was referred to the Committee on Publication.

Whereupon the hour of 12 o'clock having arrived, the Society adjourned until 2 o'clock P. M.

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AFTERNOON SESSION.

2 O'CLOCK P. M.

The President—The Society will please come to order. The next paper on the programme is that entitled "Medical Properties of Fraxinus Americanus," by Dr. J. I. Rooker, Castleton, Ind.

Dr. Rooker read his paper, which, on motion, was referred to the Committee on Publication.

The President—The Committee on Finance is now ready to report.

The report was read by the Chairman of the Committee and is as follows:

REPORT OF COMMITTEE ON FINANCE.

MR. PRESIDENT. The Committee on Finance respectfully report that the accounts of the Secretary, of the Treasurer, of the Committee on Publication, and of the Committee of Arrangements have been examined and found correct. Your committee recommends an annual allowance of $100 to the Secretary and $50 to the Chairman of the Committee on Publications.

Respectfully submitted,

S. E. MUNFORD,
J. N. PARR,
WILSON HOBBS,
J. H. WOODBURN, *Committee.*

The Secretary then read the list of delegates of the State Medical Society and American Medical Association, as follows:

DELEGATES TO STATE STATE SOCIETY AND AMERICAN MEDICAL ASSOCIATION.

COUNTY SOC'Y.	STATE SOCIETY.	AMER. MED. ASS'N.	POST OFFICE.
Allen	Geo. W. McCaskey		
	W. D. Ruhe	C. B. Stemen	Ft. Wayne.
	C. B. Stemen	H. McCullough	Ft. Wayne.
	K. K. Wheelock	G. W. McCaskey	Ft. Wayne.
	B. S. Woodworth		
Bartholomew	S. M. Voris	K. D. Hawley	Elizabethtown.
	J. S. Arwine	A. J. Banker	Columbus.
	K. D. Hawley		
	F. D. Norton	F. D. Norton	Petersville.
	A. J. McLeod		
Benton	J. H. Whitcomb		
	J. S. Mavity		
Blackford	C. K. Mason		
	H. C. Davidson	C. Q. Shull	Montpelier.

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County Soc'y.	State Society.	Amer. Med. Ass'n.	Post Office.
Boone	Jesse S. Reagan	D. C. Scull	Lebanon.
	D. H. Van Nuys	A. G. Porter	Lebanon.
	W. S. Heady	C. H. Smith	Lebanon.
	W. H. Ware		
	Thos. H. Lane		
Cass	J. Z. Powell		
	N. W. Cady		
	W. A. Bell		Logansport.
Clark	W. H. Sheets		
	N. Field	T. A. Graham	Jeffersonville.
Clinton	J. M. C. Adams		
	A. J. Chittich		
	E. E. Schwinn		
	W. A. Trobaugh		
Dearborn	J. D. Gatch	W. M. Terrill	Lawrenceburg.
	S. H. Collins		Lawrenceburg.
		Fred Treon	Aurora.
	A. J. Bowers	W. C. Henry	Aurora.
	L. J. Freeland		Lawrenceburg.
	C. B. Miller		Lawrenceburg.
	T. A. Craig		Lawrenceburg.
	Geo. Sutton		Aurora.
	H. C. Vincent		Guilford.
Decatur	John L. Wooden		
	John V. Schofield		
	D. J. Ballard		
De Kalb	F. W. Fanning	A. B. Darby	Waterloo.
	D. J. Swartz	J. B. Casebeer	Auburn.
	J. B. Casebeer		
Delaware	A. H. Goode	S. V. Jump	New Burlington.
	Jont. Ross	Jont. Ross	Blountsville.
	A. B. Bradbury		
	S. V. Jump		
Dubois	P. H. Kempf	E. G. Lukemeyer	Huntingburgh.
	E. A. Glezen		
	W. H. Demott		
Elkhart	L. H. Dunning		
	C. S. Frink	W. A. Neal	Elkhart.
	J. B. Greene	C. A. Daugherty	South Bend.
		ALTERNATES.	
		L. H. Dunning	South Bend.
		Jas. B. Greene	Mishawaka.
Fayette	John E. Chitwood		
	S. N. Hamilton	L. D. Dillman	Connersville.
Floyd	J. L. Stewart	C. P. Cook	New Albany.
	E. P. Easley	C. W. McIntyre	New Albany.

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Fountain	Geo. C. Hays	Wm. C. Cole	Attica.
	John W. Mock	John N. Spining	Covington.
	Patrick B. Moore		
	C. B. Austin		
Franklin	Charles Schum	T. J. McCarty	Brookville.
	R. J. Owens		
Gibson	F. Blair	S. H. Shoptough	Princeton.
	F. H. Maxam	N. R. Benton	Princeton.
	G. C. Fisher	F. Blair	Princeton.
	S. E. Munford	S. E. Munford	Princeton.
Grant	Lewis Williams	Alpheus Henley	Fairmount.
	Wm. Lomax	Wm. Lomax	Marion.
	J. S. Shirley	Stephen D. Ayers	Marion.
	E. M. Whitson	Luther P. Hess	Marion.
	H. D. Reasoner		
	Wm. Flynn		
Hamilton	J. M. Gray	J. T. McShane	Carmel.
	M. C. Haworth	E. C. Loehr	Noblesville.
	ALTERNATES.	ALTERNATES.	
	A. D. Booth	P. P. Whitesell	Clarksville.
	A. R. Tucker	W. B. Graham	Noblesville.
Hancock	L. C. Ely		
	N. P. Howard, jr	N. P. Howard, sr	Greenfield.
	S. A. Troy		
	C. K, Byrner		
Hendricks	C. A. White	George F. House	Pecksburg.
	T. F. Dryden	W. F. Lawson	Danville.
	F. W. Smith		
Henry	W. A. Boon		
	Wilson Hobbs	G. W. Burke	New Castle.
	J. F. Anderson	Samuel Ferris	New Castle.
	E. S. Ferris		
Howard	J. McLean Moulder	Wm. Scott	Kokomo.
	E. A. Armstrong	I. C. Johnson	Kokomo.
Huntington	H. C. Grinnell	A. J. Boswell	Andrews.
	Charles H. Good	A. H. Shaffer	Huntington.
	LaGrange Severance		
	Wright Erwin		
Jay	J. T. Dickes	C. S. Arthur	Portland.
	O. E. Abel	J. F. Kilder	New Mt. Pleasant.
	G. M. Shepherd		
Jefferson	C. H. Wright		
	James R. Lewis		
Jennings	Orville Gaddy	Jonathan Spencer	San Jacinto.
	John W. McGridy	Charles H. Greene	North Vernon.
	J. Frank Mitchell		

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Knox	G. L. Dorsey		
	B. L. Keith	F. M. Beard	Vincennes.
	J. W. Milam		
	F. W. Beard		
Kosciusko	C. R. Long	J. T. Shackelford	Warsaw.
	G. W. Brown	J. H. Davisson	Warsaw.
	B. Burket	I. B. Webber	Warsaw.
		O. J. Becknell	Warsaw.
		F. M. Searman	
LaGrange	John Dancer		
	H. M. Casebeer	George H. Dayton	Lima.
	Samuel A. Work	C. D. Goodrich	Lima.
Lawrence	Benjamin Newland		
	J. B. Larkin	J. L. W. Yost	Mitchell.
	George W. Burton	Benjamin Newland	Bedford.
	Benton J. How		
	Charles E. Rariden		
Madison	J. W. Cook	L. E. Alexander	Anderson.
	C. E. Diven	Jonas Stewart	Anderson.
	Lundy Fussel		
	J. H. Harter		
Marion	L. D. Waterman	W. E. Jeffries	Indianapolis.
	John Chambers	T. B. Harvey	Indianapolis.
	John Kitchen	George H. Cook	Indianapolis.
	J. H. Woodburn	John Chambers	Indianapolis.
	F. A. Morrison	Wm. B. Fletcher	Indianapolis.
	J. H. Oliver	C. N. Rooker	Indianapolis.
	O. B. Pettijohn	Joseph Eastman	Indianapolis.
	T. B. Harvey	J. W. Spicer	Indianapolis.
	F. S. Newcomer	J. L. Thompson	Indianapolis.
	A. W. Brayton	Allison Maxwell	Indianapolis.
	W. S. Tingley		Indianapolis.
	L. W. Rowe		Indianapolis.
	C. I. Fletcher		Indianapolis.
	F. M. Ferree		Indianapolis.
	Allison Maxwell		Indianapolis.
	W. E. Morgan		Indianapolis,
	W. W. Woolen		Indianapolis.
Marshall	S. W. Gould	T. T. Linn	Bourbon.
	D. B. Palmer	A. B. Younkman	Bremen.
	O. A. Rea		
	A. C. Holtzendorff		
Martin	H. W. Shirley		
	S. H. Brittain	J. K. Walker	Loogootee.

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	ALTERNATES.		
Martin	I. N. Plummer		
	J. C. Trueblood		
Miami	C. B. Higgins	C. B. Higgins	Peru.
	John H. Helm	J. H. Helm	Peru.
	Bourbon R. Graham		
Montgomery	A. P. Fitch	W. L. May	Crawfordsville.
	T. I. Griffith	S. W. Purviance	Crawfordsville.
	ALTERNATES.		
	O. H. Jones		
	B. H. Hutching		
Noble	J. L. Gilbert		
	G. W. Carr		
	H. G. Tucker		
Owen	J. M. Goss	W. V. Wiles	Spencer.
	Walker Schell		
	Allen Pierson		
	J. M. Stucky		
Pike	C. J. Agee	J. R. Adams	Petersburg.
	David DeTar	R. R. Kime	Union.
	David H. Daniels		
Porter	J. C. Carson	A. P. Leatherman	Valparaiso.
	H. F. C. Miller		Chesterton.
	W. S. Yohn		
		ALTERNATES.	
		D. D. Marr	Chesterton.
Posey	L. A. Glaze	O. T. Schultz	Mt. Vernon.
	T. B. Young	G. W. Welburn	Stewartsville.
		ALTERNATES.	
	S. O. Rawlings	E. V. Spencer	Mt. Vernon.
	G. R. Peckinpaugh	J. E. Gudgel	Cynthiana.
Putnam	W. F. Batman	L. M. Hanna	Greencastle.
	H. N. Devore	G. C. Smythe	Greencastle.
	Eugene Hawkius		
Randolph	A. G. Rogers	L. N. Davis	Farmland.
	A. H. Farquhar	H. P. Franks	Losantville.
	I. N. French		Winsor.
	N. T. Chenoweth		Winsor.
	J. T. Chenoweth		Winchester.
Ripley	E. D. Freeman		
	Joseph Ziteke		
	John G. Jones		
Rush	J. C. Sexton	John Arnold	Rushville.
	C. F. Parsons	Wm. F. Smith	Rushville.
	F. G. Hackleman		
	Wm. N. Megee		

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Steuben	J. F. Cameron	J. S. Hagerty	Fremont.
	F. F. Wood	W. H. Waller	Angola.
	W. H. Waller	F. F. Wood	Metz.
Switzerland		W. Walling	Indianapolis.
Tippecanoe		H. W. Rainey	Lafayette.
	Moses Baker		Stockwell.
	R. B. Wetheral	Wm. R. Moffit	Lafayette.
	L. M. Irwin	L. M. Irwin	
Tipton	T. O. Armfield	M. V. B. Vickrey	Tipton.
	N. W. Doan	A. B. Pitzer	Tipton.
	W. N. Heath		
	ALTERNATES.		
	D. P. Rubush		
	M. V. B. Vickrey		
	W. Austin		
Vanderburgh	J. W. Compton	Chas. Knapp	Evansville.
	B. J. Day		Evansville.
	A. M. Owen	A. M. Hayden	Evansville.
Vigo	S. J. Young		
	J. P. Worrell	B. F. Swafford	Terre Haute.
	B. H. Culbertson	E. E. Glover	Terre Haute.
	A. W. Spain		
	W. O. Jenkins	W. O. Jenkins	
	B. H. Culbertson		Brazil.
Wabash	E. F. Donaldson		
	Louisa F. Jessup		
	Laughlin O'Neal		
	M. O. Lorne		
	C. F. Dicken		
	R. F. Blount		
Warren	S. C. Fenton	A. M. Porter	State Line.
	S. M. Ried	Justin Ross, (alternate)	Williamsport.
	J. Ross		
Warrick	W. B. Scales		
Washington	S. W. Duff		
	A. G. Weir		
	S. H. Harrod		
Wayne	Jas. F. Hibberd	J. F. Hibberd	Richmond.
	Moses F. Dwiggins	Jacob R. Weist	Richmond.
	Cyrus N. Blount	Samuel S. Boyd	Dublin.
	Oliver N. Huff		
	Charles S. Bond		
Wells	B. F. Cummins	J. J. Metts	Ossian.
	A. H. Metts		
White	Wm. Spencer	Wm. T. Didlake	Monticello.
	J. H. Reed		

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Whitley	A. P. Mitten	D. G. Linville	
	J. Wm. C. Scott	F. G. Griser	
	William Weber		
	F. M. Magers		

Dr. Hobbs—Mr. President, without aiming to interrupt the progress of the meeting, I desire to call attention to a matter which I hope will not detain you long. You will remember that at our last session one of our members from Fort Wayne read a paper on the subject of Trephining the Spine, and all the facts claimed by him in the operation were immediately denied by a member of this Society from his own city. The member who read the paper is here now, I understand, with proof of his statement, and as the Committee on Ethics have nothing to do this year, I move you that the matter be referred to them, and they be authorized to examine into the controversy between the gentlemen—Dr. Stemen and Dr. Meyers—and report some time during this session to us.

Dr. Newcomer—As the chairman of the Committee on Ethics, I wish to say, Mr. President, that this is a matter that has no right to come before that committee.

Dr. Hibberd—Mr. President, I suppose that this Society is competent to ask the Committee on Ethics to do anything that it desires them to do.

Dr. Woodburn—Mr. President, I do not think this can properly come before the Committee on Ethics. It seems to be simply a question of veracity between these two gentlemen.

Dr. Blount—Mr. President, I move to lay the whole matter on the table.

The motion was carried.

The President—The next paper on the programme is one upon "Electricity and Electro-Therapeutics," by D. B. Palmer, M. D., of La Paz. He is not present, and as Dr. O. N. Huff, of Fountain City, who was to read a paper to-morrow afternoon, can not be present at that time, if the Society is willing, we will hear him now. His subject is "Etiology and Treatment of Acute Croupous or Lobar Pneumonia.

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Dr. Huff read his paper, which, after discussion, was referred, by motion, to the Committee on Publication.

Dr. McCaskey—Mr. President, I would like to make a request of the Society. I wish to present to the Society, before its close, a paper and demonstration of the *Pneumatic* Cabinet. It will take several hours to make the necessary preparations. To-morrow afternoon, immediately after dinner, Dr. L. L. Todd is on the programme, and I hold a note from him asking you to give me his hour.

Dr. Harvey—Mr. President, I move that the request of Dr. McCaskey be granted and that his paper and demonstration be made the special order for 2 o'clock to-morrow afternoon.

The motion was carried.

The President—The next paper on the programme is by J. F. Hibberd, M. D., Richmond; subject, "Disinfectants."

Dr. Hibberd read his paper, which, on motion, was referred to the Committee on Publication.

The President—Gentlemen of the Society, I have the pleasure of introducing to you Dr. P. W. Mendenhall, of Georgetown, Ill., who is a delegate from the Illinois State Medical Society.

Dr. Mendenhall—Gentlemen: Your President has just told me that he would expect me to make a few remarks. I am happy to meet you. I will tell you that I am no speech maker. I practice medicine. I was born in Indiana—am a Hoosier by birth and a Sucker by adoption. I am very glad to have met you, and I will always consider it as one of the happiest moments of my life to come here and visit your Society in my native state.

Dr. Harvey—Mr. President: It has occurred to me that Dr. Hibberd's paper is worthy of more than a passing notice and that we should take some further action in regard to it, and if it would be in order I move you that this Society recommend it to the State Board of Health for publication and general distribution.

The motion was carried.

The President—The next paper on the programme is that of Thomas B. Harvey, M. D., of Indianapolis; subject, "Laparotomy."

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Dr. Harvey read his paper, and after discussion, on motion, it was referred to the Committee on Publication.

The President—The next paper is that of E. Hadley, M. D., of Indianapolis; subject, "Emmenagogues."

Dr. Hadley read his paper, which, after discussion, was referred by motion to the Committee on Publication.

The President—The question of visiting the Insane Asylum and holding a session there on the invitation of Dr. Fletcher, was left for action at this hour, and if there are any motions on the subject I will hear them.

Dr. Hibberd—Mr. President, for the purpose of getting the matter before the Society, I will move that we accept the invitation for to-morrow at 3 o'clock P. M., and I will vote against the motion because I think it is impracticable for this Society to have a session there. Personally, I would like very much to be there, but I do not think we can get through our business and go out there also. The motion was lost.

On motion the Society adjourned until to-night at 8 o'clock.

EVENING SESSION.

8 O'CLOCK P. M.

The Society met with the Vice-President in the chair.

The Vice-President—The Society will please come to order. All the ex-Presidents of the Society are requested to take seats on the stage, while we listen to the address of our President, Dr. J. S. Gregg; subject, "Glimpses of a few of the Beacon Lights of Medical History."

Dr. Gregg read his paper, which on motion was referred to the Committee on Publication.

The Vice-President—The paper is now open for discussion if any one wishes to make any remarks.

Dr. Ray—I do not think it is customary to discuss the President's paper; I am not sure about it.

The Vice-President—According to my recollection it is customary.

Dr. Hibberd—There is no question but that it is customary.

Dr. Ray—As nobody else seems ready to discuss, criticize or

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eulogize the paper, I will make a few remarks. In my estimation the paper has shown a great amount of research and an appreciation of the "Beacon Lights" of medical science in its early stages. I have been well entertained, and am well pleased, as far as I am personally concerned, with the paper. I am very thankful to the President for his address.

On motion the Society adjourned to meet to-morrow, Wednesday, May 12, 1886, at 8:30 A. M.

SECOND DAY.

MORNING SESSION.

WEDNESDAY, MAY 12, 1886.

The President—Gentlemen, we will come to order and proceed to business as arranged by the programme. The Secretary will please announce the names of members of the Committee on Nominations.

The Secretary announced the names of the Committee on Nominations as follows:

MEMBERS OF COMMITTEE ON NOMINATIONS.

Allen, C. B. Stemen; Bartholomew, J. J. Riley; Blackford, Peter Drayer; Boone, W. S. Heady; Cass, J. Z. Powell; Clinton, E. E. Schwinn; Dearborn, S. H. Collins; Decatur, J. V. Schofield; De Kalb, D. J. Schwartz; Delaware, A. H. Good; Fayette, R. W. Sipe; Floyd, Charles Bowman; Fountain, C. B. Austin; Gibson, G. C. Fisher; Grant, Lewis Williams; Hamilton, J. M. Gray; Hancock, N. P. Howard; Hendricks, F. W. Smith; Henry, E. S. Ferris; Howard, J. McLean Moulder; Huntington, Erwin Wright; Jackson, T. S. Galbraith; Jay, J. T. Dickes; Jefferson, C. H. Wright; Jennings, J. F. Mitchell; Knox, F. M. Beard; Lagrange, John Dancer; Madison, B. F. Spann; Marion, F. M. Ferree; Marshall, O. A. Rea; Martin, H. W. Shirley; Miami, C. B. Higgins; Montgomery, W. J. Hurt; Noble, J. L. Gilbert; Owen, Allen Pierson; Pulaski, G. W. Thompson; Putnam, E. Hawkins; Randolph, A. H. Farquhar; Ripley, E. D. Freeman; Rush, J. C. Sexton; Steuben, W. H. Waller; Tippecanoe, Moses Baker; Tipton, N. W. Doan; Wabash, R. F. Blount; Warren, Justin Ross; Warrick, W. B. Scales; Wayne, J. F. Hibberd; Wells, B. F. Cummins; Whitley, A. P. Mitten.

On motion, the Committee on Nominations was ordered to go into session at 9:30 A. M.

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The Secretary—There is a matter of which I wish to speak. Several weeks ago Miss Rachael Bailey read a paper which was referred to the State Society. The Secretary failed to notify the State Society, and consequently it was left off the programme. Miss Bailey is here with her paper.

The President—I have been informed that Dr. Green, of Mishawaka, who is down for 9:30, is not present, and if there is no objection, we will allow the paper named by the Secretary to be read in place of it.

The Secretary—Mr. President, I have a communication from Dr. Wishard, of the City Hospital, which I will read.

The Secretary read the communication, as follows:

INDIANAPOLIS, May 10, 1886.

Dr. E. S. Elder, Sec. Ind. State Med. Soc.:

DEAR DOCTOR: The members of the State Medical Society are cordially invited to visit and inspect the new City Hospital at any time during the session of the Society. Will you kindly convey the invitation to them, and oblige

Yours truly, W. N. WISHARD, Sup't.

Dr. Lomax—Mr. President, I move that the invitation be accepted, and that the members visit the City Hospital as they may find opportunity.

The motion was carried.

Dr. Stemen—Mr. President, I rise to a question of privilege. One year ago in this Association I read a paper. After reading the paper a charge was made that the case reported had never occurred; that it was an imposition upon this Association; that the operation had not been performed. In the discussion of last year I read this statement made by the gentleman who made the charge: "In lithotomy we cut *into* the bladder; in enterotomy we cut *into* the bowels; in tracheotomy we *open* the trachea, and as the vertebral canal had not been opened, why call it a case of trephining, when the operation of trephining is defined to consist in the *complete* perforation of a bone by means of a small circular saw?" Now, Mr. President and gentlemen of the Association, I hold in my hand the official post mortem in this case by the coroner of our city; I hold in my hand the statements of your honored President, who assisted

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me; I hold certificates of five other reputable physicians who were present and witnessed the operation. And with these transactions published as they are I feel that an injustice has been done me. I only ask this Association to grant the privilege of publishing the statements of these honored gentlemen, whom you know, in the report of this year's proceedings, without comment. I have nothing to ask only that I be set right in regard to this operation. If I have practiced an imposition on this Society, if I have reported a case operated upon that I did not operate upon you ought to know it—it is due you to know it. If I have honestly reported a case I should not be charged and stand charged in the Transactions of this Society with practicing or attempting to practice an imposition upon you. I ask it as a personal favor, I ask it as due to me as a member of this Association, that the Transactions shall show the statements of the gentlemen who were present, and of the coroner of the county in which I reside. I will say further that I am willing to pay for the publication, so far as that is concerned.

Dr. Kemper—I move that the request of Dr. Stemen be granted, and that the report be published in our Transactions.

Dr. Boyd—I second the motion.

The President—It is moved and seconded that the request of Dr. Stemen be granted, and that the coroner's report and the certificates of the physicians who were in attendance at the operation and at the *post mortem* examination be spread of record in our published report.

Dr. Blount—Mr. President, this is only getting up a war that will have no end. Next year the other gentleman will want to come in and publish something else. I am willing that something should go in the record to show that this gentleman is correct in his opinion, but I am certainly not willing that so much matter should go into our Transactions.

Dr. Kemper—I will say, Mr. President, that the whole amount will not exceed a very few pages. It will not be cumbersome at all, and the explanation will be made in just as few words as possible.

Dr. C. S. Bond—Mr. President, I am not in favor of having this amount of matter in our Transactions. We have no means of knowing what the nature of this transaction is. Next year the

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gentleman who made the first statement, Dr. Meyers, will ask the Society to publish a statement defending himself, and so on. It is purely a personal matter, and should be treated as such.

Dr. Rea—I want to say, Mr. President, that this Society has made no charge against the Doctor. It is an individual matter and should not be brought before this Society for discussion, nor should it encumber the records. I undertake to say that there is scarcely a member of this Society who knows what this matter is about. The Society should not attempt to shoulder any personal quarrel.

Dr. Stemen—I do not want you to shoulder a personal quarrel. A charge was made in your open Association that I attempted to practice an imposition, and your records show that. I ask you to take the official statement of your president, who assisted me; I ask you to take the official statement of the coroner of the county. It is not a personal quarrel. I have not engaged in a word of controversy with the gentleman—not a single word. Your Transactions contain his statement, saying it was not a case of trephining, and I only ask that I be set right. I feel that every single member of the profession who loves his reputation and character will say I am right.

Dr. Hibberd—Mr. President, there is just this in a matter of this kind: This Society heard two papers. One asserted one thing and the other asserted that it was not true. If this matter comes up again next year, very well; don't trouble yourselves about crossing a bridge until you get to it. If a thing that is wrong comes up, make it right. I did not hear the paper last year, and I did not hear the statement that it was not true, and I haven't read them in the Transactions; but a gentleman has been accused publicly of having uttered a falsehood, and he comes here and ask simply that the corrections of this statement may go of record. If I were in his place I would not stay in this Society five minutes after such a thing was denied me.

The motion was carried.

The statements and certificates referred to by Dr. Stemen are to be found on page 42, *ante.*

The President—The first paper this morning is by C. S. Bond, M. D., of Richmond; subject, "Urea," which we will now hear.

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Dr. Bond read his paper, and after discussion it was, on motion, referred to the Committee on Publication.

Dr. Blount—Mr. President: I think Dr. Bond should be requested by this Society to continue his investigations on this subject and report the results to us next year.

The President—I suppose it will be taken by consent if there is no objection; and Dr. Bond is then requested to continue his investigations and report next year. As ordered during the executive session we will now hear the paper on "Heredity," by Miss Rachael L. Bailey, of Spiceland, Ind.

Miss Bailey read her paper, which, after discussion, was referred by motion to the Committee on Publication.

The President—The next paper on the programme is that by L. H. Dunning, M. D., South Bend, Ind.; subject, "Foreign Bodies in the Bladder." As Dr. Dunning is not present, we will pass to the next one, by S. H. Collins, M. D., Lawrenceburg; subject, "Why, as a Rule, does One Attack of a Specific Disease Protect from Another of the Same Kind?"

Dr. Collins read his paper, which was discussed and, on motion, referred to the Committee on Publication.

The President—We will now hear the report of the Committee on Nominations.

The Committee on Nominations made the following report:

The Committee on Nominations met at 9:30. Moses Baker was called to the chair; F. W. Beard, Secretary. The following persons were duly nominated as officers of the Society for the ensuing year:

President—G. W. H. Kemper, Delaware county.
Vice-President—W. V. Wiles, Owen county.
Secretary—E. S. Elder, Marion county.
Assistant Secretary—J. McLean Moulder, Howard county.
Treasurer—C. B. Higgins, Miami county.
Committee on Necrology—J. F. Hibberd, Wayne county.

Dr. Harvey—Mr. President, I move that the report of the Committee on Nominations be adopted.

Dr. Woodburn—I second the motion.

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The motion was carried and the report of the committee was adopted.

Dr. Hibberd—Mr. President, if I am in order, I have a resolution I would like to offer.

The President—You may offer it now, if there is no objection.

The resolution was read as follows:

WHEREAS, The statute creating the Indiana State Board of Health prescribes that one of its duties shall be to advise other State Boards concerning the sanitary construction and condition of public buildings; and

WHEREAS, The said Board of Health, pursuant to the recommendation of a sanitary convention held in Indianapolis, February 18, 1886, are now investigating the plumbing and other sanitary conditions of the Indiana State House, now under construction; therefore,

Resolved by the Indiana State Medical Society, That it is the sense of this Society that the State Board of Health should, through the aid of competent and reliable expert investigation, continue the examination of said State House, and if anything wrong be found in its plumbing or other sanitary arrangements, that said Board insist, by all proper methods, that said State House shall be finished in as perfect sanitary condition as the present state of scientific knowledge will warrant.

Dr. Hibberd—Mr. President, I have a word of explanation now. There has been a great deal of talk about the matter for some time, but nothing very definite until in January last, when there was a communication in the *Sanitary Engineer* stating that there were defects in the plumbing of nearly every State House in the United States, and nearly every parliamentary building abroad; that from year to year the inmates suffer, and that the expenses in attempting to remedy these evils is simply enormous. At this moment Ohio is spending thousands of dollars in repairing the plumbing of their State House. I do not assert that it was the sanitary condition of that State House that made so many members of their State Senate take a trip in different directions, but I do say that before they went away they examined the State House and found it in such a shape that they are now spending a great deal of money to remedy it. If there is a time that our State House should be made right it is now. I do not assert that there is anything wrong, but we want to know that it is not wrong, and this Society should give its cordial support to the State Board of Health in their investigations. If everything is found right we can compliment them,

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etc., and if anything is found wrong it can be remedied. Although I never expect to go to that legislature myself, I do not want my friends to suffer.

Dr. T. B. Harvey—Mr. President, I move the adoption of the resolution.

Dr. F. W. Beard—Dr. Hibberd is generally right, but sometimes goes wrong. I think he is wrong in this. If we are to expend any talent or any money in this way I would rather it be spent upon the sanitary conditions of the school houses. As to fostering and perpetuating the health and lives of politicians, if they are as corrupt in the State House as they are in my county, the sooner they die the better for society. As to the Board of Health, I believe in giving them all the moral support we have.

Dr. Boyd—Mr. President, I do not want to take the time of the Society, but I do want to say a word in defense of the resolution. If everything is found to be right, it is all right. If there is anything wrong it ought to be made right now. The motion was carried.

The President—The next paper is that of Dr. N. Fields, of Jeffersonville; subject, "Blood Poisoning." He is not here, but I see Dr. J. W. Milan, of Bruceville, is here, and we will now hear his paper, entitled, "Some Remarks on the Relation and Duties of the Physician to the Public."

Dr. Milan read his paper, which after discussion was, on motion, referred to the Committee on Publication.

The President—Gentlemen, Dr. P. W. Mendenhall, the delegate from the State of Illinois, is compelled to take his leave and will now make a few remarks.

Dr. Mendenhall—Ladies and gentlemen—I see there are ladies present and I will address them—I want to thank you for the cordial reception that I have had here and the two pleasant days I have spent with you. I shall leave remembering this as one of the brightest periods of my life; if any of you should visit our Society I believe you will meet with the same cordial reception. It will be held next week at Bloomington. In bidding you farewell I will shake hands with your President for you.

On motion Dr. Mendenhall was unanimously elected an honorary member of the Indiana State Medical Society.

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Dr. Harvey—Mr. President, I understand that there is now no by-law or rule by which delegates may be appointed from this State to other State Medical Societies. I move you that the President of this Society be authorized to appoint delegates to our neighboring State Societies. The motion was carried.

Dr. Hibberd—Mr. President, I wanted to ask a question. I had the honor last year to read a paper, by grace, to this Society in regard to the application of morphia to carbuncle. I have had a number of reports, and have had some experience, which have been very favorable. I would like any gentleman who has had any experience in the use of the remedy to let us know the results.

Dr. T. B. Harvey—Mr. President, I have had such favorable experience with the use of that remedy that I had thought to report to him, but as I don't report anything, I did not do it. I have treated four cases of carbuncle since I read the notice of that remedy in the paper of last year, and I must say, with the most happy results. They were bad cases, and instead of having to use the old-fashioned treatment, which is so severe—that of incision or the injection of carbolic acid—I simply made use of the remedy as advised by Dr. Hibberd, ten per cent. of the oleate of morphia, and in the four cases relief was almost immediate, and they seemed to get well from that moment; in but one case did I have to use the knife, and that was a very bad case that had gone on some time. I use the knife only for the purpose of cutting loose the slough which had commenced forming before I commenced using the remedy. I can recommend the remedy as Dr. Hibberd did last year.

Dr. Newcomer—Mr. President, I have to report three cases of carbuncle treated with perfect success. I used Squibbs' oleate.

Dr. Hibberd—So did I. The oleate made in stores doesn't do so well.

Dr. Maxwell—Mr. President, I have treated in the past year, with the oleate of morphia, five cases of carbuncle; if you include about ten carbuncles which one man had, large and small, it would make fourteen cases. I have used, except in one case, a ten per cent. solution. In one case I used a five per cent. solution, with only slight effect, and afterwards used ten per cent., which gave

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complete relief. In none of these cases did I have to make any incision.

Dr. J. M. Stuckey—Mr. President, some twenty-five years ago in treating a case of carbuncle, I made a mixture of thirty grains of pulverized opium with an ounce of simple cerate, made into an ointment, and have used that from that day to the present in the treatment of all my cases of carbuncle, and always with results similar to those reported by those who have used ten per cent. of the oleate of morphia.

Dr. H. D. Wood—Mr. President, since last year I have treated five or six cases of carbuncle with oleate of morphia, and in four with good success, relieving them almost immediately. In the other, which had progressed further before it came under my observation, it relieved the pain, but I was necessitated to use the knife. In that case I think the oleate produced a very good effect, and that the patient did not suffer as much pain as he would had I not used the remedy. In all cases of boils that have come under my observation I have treated with oleate of morphia, and it has arrested the progress of the boil.

Dr. Moses Baker—I would like to ask a question for the sake of informing us young men. I would like to know how to use the remedy.

Dr. J. F. Wood—Mr. President, a year ago I was just recovering from a carbuncle myself, and was very much interested. Two or three weeks after my return home another carbuncle made its appearance on my neck. I had forgotten some of the important part of Dr. Hibberd's report and I wrote him. He kindly replied, giving me directions, and I at once began the use of the remedy, and experienced very much relief, and must say that the treatment was entirely satisfactory; and I have treated since that one for myself and one upon a young doctor who resides with me, with perfect results, whereas I suffered from four to eight weeks with carbuncle prior to that time. After beginning the use of the oleate the pain was very slight. I have treated one case in a patient and the result was very satisfactory.

Dr. Harvey—I want to add one remark, and that is that the oleate of morphia is not only to relieve pain but it is curative.

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There is no question with me about that, although I do not understand its *modus operandi.* There is one form of carbuncle in which I think it is peculiarly applicable, and that is on the lip. If it is allowed to go on it will scar the lip. With a lady it is worse than with a male. One of my cases was in the person of a young lady, on the lip, and I found that the application relieved the pain and cured it without leaving a scar. Sloughing did not take place in three cases—it seemed to go back by resolution. Sloughing occurred in but one case, and in that it had continued several days before I saw it. I used it by putting it on with the finger. It does not matter how much. And I have had it continued every hour or so.

Dr. G. C. Smythe—Mr. President, I am a little bit skeptical. I think it is a disease in which the mischief is partially done before it makes its appearance. You have already extensive inflammation in the connective tissue, which is in a sloughing condition. You will pardon me if I am skeptical when I hear you say that the simple application of oleate of morphia will destroy the cause of the inflammation in a carbuncle and remove this dead material, which is already present, and this infiltration which is in the tissue, by the simple process of absorption without any incision. I am inclined to think that some of these eminent gentlemen have been mistaken; that they did not have a real old-fashioned carbuncle. I think there is some doubt about my friend Harvey's young lady having a carbuncle on the lip. It is a dangerous thing to deal with.

Dr. Harvey—Mr. President, as I have been personally alluded to, I would like to claim the floor for a moment. My friend thinks I do not know a carbuncle when I see it! I understand that in a carbuncle there is such a low degree of vitality that there is not enough inflammation to produce suppuration. If it would suppurate it would get well itself. It does not suppurate, and the gangrenous condition simply spreads in the tissue. I have seen a carbuncle once in a while. If Dr. Smythe thinks, and he has a right to think, that he can stay over in Greencastle and tell better what happens in Indianapolis than I can when I look at it, very well. I was a skeptic last year, but my first case, after noticing this method of treatment, was one in which the bare mention of using a knife seemed as if it would throw the patient into convulsions, and I concluded I would try this remedy. I did so and noticed an improvement. It was a carbuncle.

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Dr. Lewis Williams—Mr. President, I have been engaged in the carbuncle business myself, not only in my practice, but in my experience. I tried oleates, but did not meet with success. It was not Squibb's. Finally we had to open it, and that was the first thing that relieved me. They continued to return year after year. Finally the idea occurred to me that there was a similarity between them and erysipelatous inflammation and I tried iodine. It produced very great fullness and rather distress in my head, but the thing seemed to go on. Finally at the first appearance of these carbuncles I concluded I would make applications externally of the iodine. I did so, applying it rapidly, as soon as it would dry putting it on again. I must assure you that it was the last of carbuncles for me.

Dr. R. A. Wood—Mr. President, when I listened to Dr. Hibberd last year I was a skeptic. Soon after returning home a patient came under my observation with what I pronounced a carbuncle. I used the oleate of morphia, as suggested by Dr. Hibberd, and with such satisfaction that the next one which came under my observation I used the same application. I have treated five cases since in the same way, all with the best satisfaction.

Dr. J. F. Wood—Certainly my friend Dr. Smythe can not be more skeptical than I was, but if he had the same experience I had he would say, "Oh, Lord, anything to get relief!" I tried oleate of morphia. When the first application was made the carbuncle seemed to be extremely tender, but after continuing it 15 or 20 minutes I certainly experienced relief; I could rest. The nervous prostration was relieved and I could sleep lying down in any way. My appetite and digestion got better. If these skeptical gentlemen had a practical application they would have a little more faith.

On motion the Society took recess until 2 o'clock P. M.

AFTERNOON SESSION.

2 O'CLOCK P. M.

The President—We will now come to order, gentlemen. The special order of business for this hour is Dr. McCaskey's paper and demonstrations.

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Dr. McCaskey read his paper and demonstrated the use of his cabinet.

Dr. Blount—The Committee on Credentials are now ready to report.

The President—We will now hear the report of the Committee on Credentials.

Dr. Blount—In the case of Ripley county the papers were handed to your committee and have been examined, and we find that they have fully complied with the requirements of the constitution, and therefore recommend that they be incorporated as an auxiliary to the State Society. In regard to the Warren County Medical Society, we find they have also complied with all the requirements of the constitution, and should be incorporated as an auxiliary to the State Medical Society. The committee respectfully submits this report to you.

Dr. Hibberd—I move that the report of the committee be adopted.

The motion was carried.

The Vice-President—The next in order is a paper by Dr. J. S. Gregg, our President. Subject, "Locomotor Ataxia."

Dr. Gregg read his paper which was, on motion, referred to the Committee on Publication.

The Vice-President—I am requested by the President to announce that the following gentlemen have been appointed delegates to State Medical Societies:

Michigan—H. D. Wood, M. D.; F. Wood, M. D.; Dr. Metz; June 9, 1886.

Ohio—J. M. Gray, M. D., Noblesville; C. B. Stemen, M. D.; May 2 and 3.

Kentucky—T. B. Harvey, M. D.; George C. Cook, M. D.; W. W. Walling, M. D.; Winchester, June 16.

Illinois—Dr. J. M. Gray, Noblesville.

The Vice-President—The next thing will be a paper by Dr. A. Henly, of Fairmont. Subject: "Tumors of the Brain." He is not present. The next on the programme is a paper by Dr. E. S. Elder, of Indianapolis. Subject: "Etiology of Pneumonia."

Dr. Elder—Mr. Chairman, I prefer not to read my paper, if the Society will excuse me.

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Dr. Harvey—I move that Dr. Elder's paper be read by title and referred to the Committee on Publication.

The motion was carried.

Dr. Ferree—Mr. President, I have a resolution that I wish to introduce, and will ask that it be referred to the Committee on Ethics without reading, and let them decide what shall be done with it.

The President—Dr. Newcomer is chairman of the Committee on Ethics, and will take charge of the resolution. Dr. Bell is now present, and if he is ready, we will now hear his paper. Subject: "Washing out the Stomach as a Relief in Certain Cases of Obstruction of the Bowels."

Dr. Bell read his paper, which was discussed and, on motion, referred to Committee on Publication.

The President—The last paper on the programme is by Dr. D. C. Bryan, of Indianapolis. Subject, "Stricture of the Urethra."

Dr. Bryan read his paper and, on motion, it was referred to the Committee on Publication.

The Secretary—Mr. President, I have been requested to present the following resolution:

Resolved, By the Indiana State Medical Society that the Secretary be instructed to restore all County Societies, which have been regularly admitted into the State Society, and whose names have not appeared in the last volume of the Society's Transactions, to the roll of County Auxiliary Societies in the forthcoming Transactions of the Society.

Resolved, That when any County Society shall fail to send delegates to the annual meetings of the State Society, it shall be the duty of the Secretary to open correspondence with such Society and use his best influence to induce it to assume and exercise its normal functions and relations to the parent body; such service not to transcend the finances of the Society to compensate for the same, and report at the succeeding annual meeting the result of his labors in this direction, to maintain the integrity and prosperity of the Society.

Dr. Maxwell—I move the adoption of the resolution.

Dr. Stemen—I second the motion.

Dr. Harvey—I do not understand the object of the resolution.

Dr. Maxwell—Perhaps I can make some explanation. There are a few County Societies, as I understand, that have not reported and their members have refused to pay dues, and they are not working

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organizations. The object is to keep the Society from retrograding. In order to do that the Secretary is directed to keep the county organization, wherever there is one, upon the rolls of the State Society, and then open correspondence with that Society and induce it, if possible, to re-organize.

The motion was carried.

The Secretary—Gentlemen, the incoming President has handed me the names of the members of the following committees:

Ethics—B. F. Spann, M. D., Chairman; S. E. Munford, M. D., Princeton; J. L. Stewart, M. D., New Albany; G. V. Woolen, M. D., Indianapolis; J. D. Gatch, M. D., Lawrenceburg.

Arrangements—D. A. Thompson, M. D., J. E. Hoover, M. D., S. E. Earp, M. D., John Oliver, M. D., J. L. Taylor, M. D.

Publication—F. M. Ferree, M. D.; A. W. Brayton, M. D.; A. Maxwell, M. D., C. B. Higgins, M. D., Treasurer; E. S. Elder, M. D., Secretary.

Necrology—James F. Hibberd, M. D.

The President—Gentlemen, I take pleasure in introducing to you a man who needs no introduction, as he is so well-known to all. I present to you your next President, Dr. G. W. H. Kemper, of Muncie, Indiana.

Dr. Kemper—Ladies and gentlemen of the Indiana State Medical Society: I desire to return to you my sincere thanks for this honor that has been conferred upon me. I will try to prove faithful to the task that has been assigned me, and I hope that every member of this Society will go out from here feeling a determination to put the shoulder to the wheel and push forward this enterprise for the year to come. We want good work here at the next session. We want short, suitable, practical papers. I hope that the County Societies will see that papers are furnished, and I promise you that I will do the best I can to help you along. I hope that we may be spared to live another year to meet again in this place. Again I thank you.

On motion the Society gave a "vote of thanks to the retiring President and officers of the Society for the faithful manner in which they have discharged their duties," by standing vote.

The Secretary—Mr. President, the exhibitors in the other room have presented the Society $25.

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On motion the Society acknowledged the present with thanks.

Dr. Newcomer, Chairman of Committee on Ethics, made the following report:

Mr. President:

The Committee on Ethics having nothing much to do had to find something and we thought it would be well to call the attention of the Society to the last amendment to Section 5 of the By-laws. "Where a member of an auxiliary society has had any right of membership abolished or abridged, on account of non-payment of a pecuniary obligation to such society, such members shall be restored to all rights thus abolished or abridged, by the payment of such obligation at any time before such society makes its next annual report to this Society; and such member may be restored at any time thereafter on a majority vote of such society, and the payment of such obligations." We are satisfied that that part of the amendment has been very frequently violated or at least has been handled very carelessly. We think that it ought to be enforced; that a member to be restored must be restored by a majority vote of his Society. You frequently can avoid a great deal of difficulty in the way of society troubles, if, when a man is out he can come in only by a majority vote.

On motion the report was adopted.

The Secretary—I am handed the following from the Committee on Ethics:

Resolved, That any member from this or of any society subordinate hereto, against whom has been or may hereafter be pending, in any of the courts of the State, any action for any violation of any of the laws of the State, shall not, while such action is pending, or after trial, if the result is an acquittal, be subjected in this or any subordinate Society to any charge or investigation concerning any matter involved in the issues under which he is to be subjected to trial, or upon which he has been found not guilty by the court.

Approved by the Committee on Ethics.

F. S. Newcomer,
F. W. Beard,
H. D. Wood, *Committee.*

On motion, the resolution was accepted and adopted.

Dr. Newcomer—Mr. President, the Committee on Arrangements has usually very much more arduous duties than those who do not know think they have to perform, and as I rather think the laborer is worthy of his hire, I would move that the chairman of the Committee on Arrangements be given twenty-five dollars for compensation for services rendered the past year. He has done an immense amount of work and correspondence for the past year.

The motion was carried.

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The Secretary—Mr. President, I have three papers referred to this Society, whose authors have not been present. One by Dr. A. A. Hamilton, of Marion; subject: "Cystic Disease of the Testicle—Report of a Case." Another by Dr. L. H. Dunning, of South Bend; subject: "Foreign Bodies in the Bladder;" and another by Dr. A. Henly, of Fairmount; subject: "Tumors of the Brain."

On motion, the three papers were read by title and referred to the Committee on Publication.

The President—Gentlemen, Dr. Gregg, your retiring President, desires to say a few words to the Society.

Dr. Gregg—Mr. President and gentlemen, upon taking my leave of you as your presiding officer, I desire to extend to you my sincere thanks for the leniency with which you have looked upon my infirmities and the uniform, kind and considerate treatment that you have extended to me. I have been painfully aware of my inability to preside over such an honorable body as this in the manner that I would like. It has not been at all satisfactory to me, but you are aware of the difficulties under which I labor, and I am fully satisfied you have made full allowance therefor.

When I was introduced to you a year ago I expressed the hope that our work for the coming year would be conducted as harmoniously as it had been the previous year, just then closing, and that I would be able to meet you on this occasion. I think my prayer has been fully answered in that regard. There was for awhile during the past winter that I felt it was very doubtful whether I would be present or not, but, since the inclemencies of the season have passed, my health has very considerably improved, and I am very happy to have been able to meet you, and I have managed to get through with my duties in a way that seems to be satisfactory. At least I have heard no expressions to the contrary.

Again thanking you for your kind treatment, I bid you an affectionate farewell, hoping I may still be able to meet you as regularly as I have endeavored to do in the past.

Upon motion of Dr. Stemen, the Society adjourned to meet the second Tuesday in May, 1887.

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CONSTITUTION AND BY-LAWS

OF THE

INDIANA STATE MEDICAL SOCIETY.

ARTICLE I.

TITLE.

The name and title of this Society shall be THE INDIANA STATE MEDICAL SOCIETY.

ARTICLE II.

OBJECT.

The object of this Society shall be to provide an organization through which the regular physicians of the State may be united in one great professional fraternity for the purpose of giving frequent and emphatic expression to the views and aims of the medical profession; to supply more efficient means than have hitherto been available for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor and interests of the medical profession; for exciting and encouraging emulation and concert of action among its members; for facilitating and fostering friendly intercourse between those engaged in it; for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men; and for the promotion of all measures adapted to the relief of the suffering, and to improve the health and protect the lives of the community.

ARTICLE III.

MEMBERS.

SECTION 1. The members of this Society shall consist of delegates from the various county medical societies of this State, organized in accordance with the provisions of this Constitution, who shall serve one year, or until the others are elected to succeed them.

SEC. 2. All members in good standing in the auxiliary county societies shall be members of this Society in all its rights and privileges, except that none but delegate members shall transact the legislative business of the session.

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ARTICLE IV.

COUNTY SOCIETIES.

SECTION 1. Any incorporated county medical society whose constitution embraces the objects of this Constitution, and the code of ethics of the American Medical Association, shall, upon application, become auxiliary to the State Society, and shall be entitled to one delegate for every five members, and one for every additional fraction of more than half this number.

SEC. 2. The names of members of such county societies, with their postoffice addresses, shall be certified by their respective secretaries, and forwarded to the Secretary of the State Society, who shall enroll them in a book kept for that purpose; and each member shall be entitled to a copy of all the publications of this Society upon the payment of its assessments.

ARTICLE V.

OFFICERS.

SECTION 1. The officers of this Society shall be a President, Vice-President, Secretary, Assistant Secretary, Treasurer and Librarian.

SEC. 2. Each officer shall be elected by a vote of a majority of all the delegates present, and shall serve one year, or until another is elected to succeed him. All officers elect shall enter upon the duties of their respective offices immediately on the final adjournment of each annual session of the Society.

ARTICLE VI.

DUTIES OF OFFICERS.

SECTION 1. The President shall preside over the meetings, preserve order, call meetings, when in his judgment the interest of the profession may require it, and perform such other duties as custom and parliamentary usage may require.

SEC. 2. The Vice-President shall assist the President in the performance of his duties, and, in his absence, preside over the meetings.

SEC. 3. The Secretary shall keep correct minutes of the proceedings of the Society, and, when approved, fairly transcribe them in a book kept for that purpose. He shall have charge of all books and papers belonging to the Society, excepting such as may properly belong to the Treasurer and Librarian, receive all moneys due the Society, and turn them over to the Treasurer, keeping an account of the same; perform all other duties which the usage of corporate or organized bodies may require, and serve as a member of the Committee on Publication.

SEC. 4. The Assistant Secretary shall assist the Secretary in the performance of the duties of his office.

SEC. 5. The Treasurer shall receive all moneys due the Society, and pay all bills approved by the Finance Committee and countersigned by the President, keeping a correct account, and making a full detailed report of the same to the annual meeting of the Society, and serve as a member of the Committee on Publication.

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SEC. 6. The Librarian shall have charge of the books, manuscripts (not specially belonging to the Secretary and Treasurer), instruments, specimens, preparations, and other scientific property belonging to the Society, keeping a complete catalogue of the same, and report the condition of his department to the annual meetings of the Society.

SEC. 7. The officers shall deliver all records, books, papers, funds and other property belonging to their several offices, to their successors, when they shall enter upon the discharge of their respective duties.

ARTICLE VII.

STANDING COMMITTEES.

At each annual meeting the President shall appoint the following standing committees, each to consist of five members, and to serve until their successors are appointed and enter upon the discharge of their duties, viz.: A Committee on Arrangements, a Committee on Credentials, a Committee on Finance, a Committee on Ethics, and a Committee on Publication.

ARTICLE VIII.

DUTIES OF THE STANDING COMMITTEES.

SECTION 1. The Committee on Arrangements shall, if no sufficient reasons prevent, be mainly composed of members at the place where the next annual meeting is to be held, and provide suitable rooms and accommodations for the meeting, and in all matters, not otherwise provided for, superintend and protect the general interests of the Society.

SEC. 2. The Committee on Credentials shall examine and report upon the validity of the credentials of the delegates from the county societies.

SEC. 3. The Committee on Finance shall superintend the monetary affairs of the Society, inspect and audit all bills and the accounts of the Treasurer, and recommend the assessment of such *pro rata* tax upon its members as may be required to defray the current and incidental expenses of the Society.

SEC. 4. The Committee on Ethics shall examine and report for the action of the Society while in attendance upon its meetings, all cases of appeals from the county societies, and complaints against members for non-professional conduct.

SEC. 5. The Committee on Publication, of which the Secretary and Treasurer shall be members, shall have charge of preparing for the press, and of publishing and distributing such of the proceedings, transactions and memoirs of the Society as may be ordered for publication. It shall supervise and edit all papers presented to the Society and ordered to be published, and report its doings to each annual meeting.

SEC. 6. The standing committees shall keep regular minutes of their proceedings, and furnish an authenticated copy thereof, to be deposited with the Librarian.

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ARTICLE IX.

VACANCIES.

All vacancies in offices, occurring in the interim of the meetings, shall be filled by appointment of the President.

ARTICLE X.

QUORUM.

SECTION 1. Two-thirds of all the delegates shall constitute a quorum competent to alter or amend the Constitution.

SEC. 2. One-half of the delegates reported to the Secretary at any meeting shall constitute a quorum to transact any business, except to alter or amend the Constitution.

ARTICLE XI.

POWERS AND DUTIES.

SECTION 1. The Society shall have full power, and it shall be a part of its duties to adopt such measures as may be deemed most efficient for mutual improvement, and for exciting a spirit of emulation among the members of the profession; for facilitating the dissemination of useful knowledge; for promoting friendly intercourse among its members; for the advancement of medical science, and for securing the objects set forth in Article II. of the Constitution.

SEC. 2. It shall have power to censure or expel any member convicted of violating its provisions, or who may be guilty of any act which may be considered derogatory to the honor of the medical profession; to hear and decide appeals coming from auxiliary societies, and enforce the observance of the code of ethics.

SEC. 3. It shall have power to raise money of its members by a tax which shall not exceed three dollars annually upon each member.

SEC. 4. The Society shall hold at least one meeting annually, and more, if deemed necessary for the promotion of its interests.

SEC. 5. It shall adopt a seal as the insignia of its corporate authority.

SEC. 6. The time and place of each succeeding meeting shall be determined by a vote of the Society.

ARTICLE XII.

FUNDS.

The funds of the Society shall be applied exclusively to the promotion of its objects, as set forth in Article II of this Constitution.

ARTICLE XIII.

CODE OF ETHICS.

The Society adopts, as a part of its regulations, the code of ethics of the American Medical Association.

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ARTICLE XIV.

AMENDMENTS.

Every proposition for altering or amending the Constitution shall be made in writing, and if such alteration or amendment receive the unanimous vote of all the delegates present, it shall be adopted; but if objection be made, it shall lie over until the next annual meeting, when, if it receive two-thirds of the quorum for amending the Constitution, it shall be adopted.

ARTICLE XV.

SEAL.

The seal of the Indiana State Medical Society shall consist of a circular disc, two inches exterior diameter, with an ornamental border or margin. Within this outer margin shall be, in Roman letters, "Indiana State Medical Society. Organized MDCCCXLIX." Within this another circle, with the motto in Latin, Roman letters, "Physiologica medicina cautionis et curæ morborum vera scientia est." The center is occupied by figures of Esculapius with staff and scroll, Hygeia casting away the serpent, surrounded on base and sides by a wreath of leaves; to the rear and right of the figure of Esculapius an owl is perched.

The following is an impression of said seal:

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BY-LAWS.

ORDER OF BUSINESS.

SECTION 1.

1. The President shall call the meeting to order.
2. The Secretary shall call the roll of delegates.
3. The Chair shall appoint the Committee on Credentials, which shall report as soon as convenient.
4. Report of Committee on Arrangements.
5. Any business requiring early consideration may, by permission, be introduced.
6. Reading such parts of the minutes of the last meeting as may be necessary for the information of the Society, such parts of said minutes to be selected in advance by the Secretary.
7. Report of the Secretary.
8. Report of the Treasurer.
9. Report of the Librarian.
10. Report of Committee on Publication.
11. President's address, if for the exclusive hearing of the Society; otherwise, the fixing of the time for hearing said address.
12. Chair to appoint Committee on Ethics, which shall report as soon as convenient.
13. Chair to appoint Committee on Finance, to report as soon as convenient.
14. Reading of papers that have been forwarded by county medical societies, and such as have been prepared by special appointments.
15. Election of officers.
16. Introduction of new business.
17. Selection of time and place for next annual meeting.
18. Chair to appoint Committee of Arrangements.
19. Chair to appoint Committee on Publication.
20. Miscellaneous business.
21. Adjournment.

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LAW OF ORDER.

SEC. 2. The deliberations of this Society shall be governed by parliamentary usage, as contained in Roberts' Rules of Order, unless otherwise determined by a vote of the Society.

REPORT OF PROCEEDINGS.

SEC. 3. The Secretary shall employ a short-hand reporter at an expense not exceeding ten dollars per day, to report to him the proceedings of the Society, and such report, when revised by him, he shall submit to the Publishing Committee for preparation for publication in the Transactions. In all cases where the debate on a paper read before the Society is published in the Transactions, it shall be placed in the volume immediately following the paper that caused it.

CONCERNING MEMBERS.

SEC. 4. The names of all members in good standing, and of all honorary members, shall be published annually in the Transactions, in alphabetical order, with their postoffice addresses, and also the names of the members with the county societies to which they belong.

SEC. 5. Every county society shall, at least thirty days before the annual meeting of this Society, make a full and correct catalogue of its members in good standing at the time, and transmit the same at once to the Secretary of this Society. If the name of a member is omitted from this catalogue that was contained in the last preceding catalogue, the county society must explain the omission by stating whether the member whose name is omitted is dead, has withdrawn, has been expelled, suspended, or whatever is the fact; and no one not a member in good standing in his county society can be a member of this Society. Where a member of an auxiliary society has had any right of membership abolished or abridged, on account of non-payment of a pecuniary obligation to such society, such member shall be restored to all the rights thus abolished or abridged by the payment of such obligation at any time before such society makes its next annual report to this Society, and such member may be restored at any time thereafter on a majority vote of such society and the payment of such obligations.

SEC. 6. The names of members who have served this Society as President or Vice President be incorporated in the Transactions annually, prefacing the list of members, and showing the year in which they served.

APPEALS.

SEC. 7. Any member of a county society who has been expelled, or otherwise brought under discipline and condemned, shall have the right of appeal to this Society.

ASSESSMENTS.

SEC. 8. All assessments of money made by this Society shall be *per capita* on all the members of all the county societies, and each county society shall collect the assessment on its members and forward the same to the Secretary of this Society

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within the time named, and any county society that fails to comply with this requirement shall be held to be in contempt, and none of its members shall be allowed to participate in the business of this Society until such county society shall have purged itself of the contempt.

SEC. 9. The annual assessment on each member of the county societies for the use of this Society shall be one dollar, which shall be forwarded to the Secretary of this Society with the annual catalogue of members, as provided in Section V hereof.

DELEGATES AND PAPERS.

SEC. 10. The delegates to this Society shall be appointed by the county societies at the time the county societies are required to make this annual catalogue of members, and the names of the delegates, one of whom shall be designated to act as a member of the Nominating Committee to be appointed at the next meeting of the Society, shall be forwarded to the Secretary of this Society as soon as they are appointed.

Regarding the appointment of delegates to the American Medical Association, hereafter the several county societies shall be required, at the time of appointing their delegates to this Society, to nominate and forward to the Secretary of this Society the names of delegates to the American Medical Association, the number of such nominations to be governed by the rules of said association; and all the nominations for such delegates shall be confirmed by this Society, which shall have power to fill all vacancies and supply all omissions of the county auxiliaries.

The names of all the delegates to the American Medical Association, appointed by the different county societies must be sent to the Secretary of the State Medical Association at least thirty days, with report of delegates, etc., before the yearly meeting of said State Society.

No voluntary papers shall be read before this Society, or printed in the Transactions, unless such paper shall have been read before the society of the county in which the author lives, and by such county society referred to this Society, and no paper so referred shall occupy more than twenty minutes of time in its reading.

SCIENTIFIC BUSINESS.

SEC. 11. The scientific communications to this Society shall consist of such papers as the county societies may order to be presented here, and the report of such special committees as may be appointed to write on selected subjects, and voluntary papers. All such papers shall be sent to the Chairman of the Committee of Arrangements at least twenty days before the annual meeting of this Society.

SEC. 12. The Committee of Arrangements shall examine all the papers submitted to them under the provisions of Section X, and determine the order in which they shall be presented to the Society. The Committee of Arrangements shall have printed a programme of business for the use of members at each annual meeting.

AUXILIARY SOCIETIES.

SEC. 13. Any county society desiring to become auxiliary to this Society may file a certificate of its compliance with the conditions of Article IV of the Consti-

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tution, and the Secretary of this Society shall be the judge of the sufficiency of such certificate until the next meeting of this Society.

PUBLICATION COMMITTEE.

SEC. 14. The Committee on Publication shall construe Section V of Article VIII of the Constitution to authorize them to alter, curtail or reject any and all papers referred to them that do not belong to the business proceedings of the Society; and any paper referred to them which they deem meritorious, but not suitable for publication in the Transactions, they may, in their discretion, return it to its author and authorize him to offer it to a medical journal for publication, with the announcement that it has been read before the Indiana State Medical Society.

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LIST OF PAPERS

PRESENTED TO THE

INDIANA STATE MEDICAL SOCIETY

FROM THE DATE OF ITS ORGANIZATION
TO 1886, INCLUSIVE.

NAME OF AUTHOR.	RESIDENCE.	DATE.	PAGE	NAME OF PAPER.
Adams, J. McC	Frankfort	1871	83	Report on Prevailing Diseases of the Seventh Congressional District.
"	"	1872	111	" " " "
Alexander, J. H.	Clifty	1881	50	Trichinosis—Report on two cases.
Andrews, George L	Laporte	1879	26	Rational Treatment of Dysentery.
Arwine, J. S	Columbus	1884	40	Animal or Race Poison.
Austin, W.	Windfall	1882	62	An Operation for Ovariotomy.
Axline, A. J	Rushville	1882	114	Diphtheria.
Ayers, H. P	Fort Wayne	1859	30	Report on Obstetrics.
"	"	1867	127	Epidemic Dysentery in Allen county in 1845, 1854 and 1864.
"	"	1868	106	Indiana's Idiotic Children.
"	"	1871	161	Self Pollution in Children.
"	"	1872	1	President's Address.
Baker, Moses	Stockwell	1885	136	Post-Partum Hemorrhage.
Beasley, George F	Lafayette	1883	181	Case of Gunshot Wound of the Knee.
Beck, Joseph R	Fort Wayne	1875	95	Iodide of Potassium.
"	"	1880	100	Tumors of Anterior Wall of Vagina.
"	"	1880	222	Report on Necrology.
Bell, W. H	Logansport	1875	163	Epilepsy arising from Uterine Diseases.
"	"	1876	70	Reflex Morbid Condition of the Uterus.
"	"	1882	35	Management of Still-born Children after Delivery.
"	"	1883	5	President's Address.
Blair, W. W	Princeton	1878	96	Epidemics—Small-pox.
Blount, C. N	Hagerstown	1874	91	Diabetes Mellitus.
Bobbs, J. S	Indianapolis	1853	78	Report of Committee on Surgery.
"	"	1856	15	Report on Surgery.
"	"	1857	53	Biographical Sketch of Dr. Deming.
"	"	1868	2	President's Address—The Origin, Object and Progress of the Indiana State Medical Soc.
Bond, C. S	Richmond	1885	78	Consumption in Indiana.
Boyd, S. S	Dublin	1874	131	Veratrum Viride.
"	"	1876	23	Tobacco.
"	"	1877	1	President's Address—Empiricism.
"	"	1884	17	Medical Legislation.
Bray, M. J	Evansville	1854	25	Symptoms, Causes, Pathology and Treatment of Schirrus.
"	"	1855	67	President's Address.
Brower, J. H	Lawrenceburg	1853	14	President's Address.
"	"	1853	74	Report of Committee on Vital Statistics.
"	"	1855	11	Progress of Medicine.
"	"	1856	56	Report of Committee on Vital Statistics.
"	"	1860	40	Progress of Medicine.
"	"	1863	45	Camp Diarrhea.

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NAME OF AUTHOR.	RESIDENCE.	DATE.	PAGE.	NAME OF PAPER.
Brower, J. H.	Lawrenceburg	1865	21	Atresia Vagina from Imperforate Hymen.
Bryan, D. C.	Indianapolis	1885	12	The Pancreas.
Bullard, T.	"	1851	15	President's Address—Ultraism in Medicine.
"	"	1859	11	Address.
Butler, D. W.	Dunreith	1873	51	Case of Spontaneous Gangrene of the Leg.
Byford, Wm. H.	Evansville	1854	78	Report of the Proceedings of the American Medical Association.
Cassleberry, Isaac	"	1855	52	An Inquiry into the Physiology of the Organic Nervous System.
"	"	1872	93	Electricity as a Cause of Disease.
Chambers, John	Indianapolis	1877	21	Gordon's Method of Treatment of Colles' Fracture of the Radius.
"	"	1883	145	Some of the Causes of Cystitis in the Adult Male.
Charles, H.	Carthage	1881	121	Tobacco and its Toxic Effects.
Chittenden, Geo. F.	Anderson	1885	153	A Case of Compound Dislocation of the Knee-joint.
Clark, Dougan	Richmond	1867	116	Female Doctors.
"	"	1871	29	Anæsthetics in Midwifery.
Cogley, T. J.	Madison	1856	66	Hospitals in Europe.
"	"	1857	19	On Practice of Medicine.
Cole, H. C.	Kokomo	1866	100	Progress in Medicine.
Commons, Wm.	Union	1880	63	Ergot; its Use and Abuse.
"	"	1881	54	Trichinosis.
Comingore, John A.	Indianapolis	1861	43	Cases Reported.
"	"	1866	72	Excision of Bones.
Compton, J. W.	Evansville	1881	18	Sanitary Progress.
"	"	1882	188	Animal Vaccination.
Comett, W. S. T.	Versailles	1850	13	President's Address—The Rise, Progress, State, and Future Prosperity of Medical Science.
"	"	1852	33	Report of Committee on the Practice of Medicine.
Cook, Geo. J.	Indianapolis	1884	164	Pruritus Ani.
"	"	1885	145	Excision of Cancer of the Rectum.
Curran, R.	Jeffersonville	1872	121	Nosology of Diseases in Clark county.
Dare, John S.	Bloomington	1878	86	Nasal Catarrh.
"	"	1881	110	Quinine.
Davis, R. A.	New Albany	1881	66	Impaction of Gall Bladder with Discharge of 130 Calculi.
Davidson, Wm.	Madison	1851	25	Report on Anæsthetic Agents.
Day, B. J.	"	1883	34	How Cuticle is Formed in Sponge Grafting.
Deming, E.	Lafayette	1854	14	President's Address.
Dills, Thos. J.	Fort Wayne	1878	92	Report of a Case of Basedow's Disease.
"	"	1884	73	Intra-Ocular Tumors.
Dunning, J. H.	South Bend	1885	118	A General Practioner's Contribution to the Study of the Subsequent Effects of Emmet's Operation.
Duzan, G. N.	Zionsville	1871	133	Nature and Cure of Disease.
"	"	1873	27	Cholera Infantum.
Earp, Samuel E.	Indianapolis	1883	168	Typhoid Fever.
Eastman, Joseph	"	1878	98	Upward Dislocation of the Sternal End of the Clavicle.
"	"	1879	108	Excision of the Knee-joint, with cases.
"	"	1883	155	A Few Thoughts on the Anatomy, Surgery and Hygiene of the Rectum.
"	"	1884	82	Cases of Abdominal Surgery.
"	"	1885	96	Abdominal Surgery, with Cases and Comments.
Elder, E. S.	"	1874	113	Morbo Lacteo.
"	"	1878	93	Immediate Placental Delivery on Natural Labor.
"	"	1880	216	Placenta Prævia—Occult Hemorrhage and Mal-presentation.
"	"	1882	152	Health Resorts West of 100th Meridian.
Elliott, Thos. B.	"	1858	13	Report on Chronic Diseases of the Brain.
Elstun, W. J.	"	1869	26	Digestive Assimilation of Medicine.
"	"	1871	157	Bromide of Potassium.
Ellis, C. R.	Hardenburg	1857	42	Blood-letting in Pneumonia.
Field, N.	Jeffersonville	1868	114	Cholera.
"	"	1869	1	President's Address—"The Trouble and Responsibility of the Medical Profession."
"	"	1872	77	Thoracentesis.
"	"	1873	31	Expectant mode of Medicine.
"	"	1882	84	Etiology of Endemic Fever.
"	"	1883	100	A Notice of Bacteria Microscopy.

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NAME OF AUTHOR.	RESIDENCE.	DATE.	PAGE.	NAME OF PAPER.
Fishback, Charles	Shelbyville	1857	45	Medical Education.
"	"	1859	17	Report on Medical Education.
"	"	1860	56	Medical Legislation.
Fletcher, Wm. B.	Indianapolis	1866	88	Human Entozoa.
Flynn, Wm.	Madison	1880	206	Epilepsy.
Fravel, T.	Westville	1878	76	Epidemic of Diphtheria.
Frierwood, E. K.	North Grove	1877	111	A Case of Inguinal Hernia.
Fry, T. W.	Crawfordsville	1858	19	Case in Surgery.
"	"	1860	30	Medical Inhalation.
Gaddy, N. D.	Lovett	1883	63	A Few Thoughts Concerning Systematic Prevention of Disease.
Garver, J. J.	Indianapolis	1885	195	Asiatic Cholera.
Gatch, J. D.	Lawrenceburg	1880	153	Harmony and Associated Action in Connection with State Medicine.
Gillum, Wm. H.	Rockville	1875	73	Hydrate of Chloral in Asthmatic Paroxysms
Glover, E. E.	Terre Haute	1885	168	On Excision of Internal Hemorrhoids.
Graham, J. A.	New Albany	1855	29	Report on Obstetrics and Puerperal Fevers.
Green, J. N.	Stilesville	1883	193	Typhoid Fever.
Gregg, J. S.	Fort Wayne	1876	107	Medical Education.
"	"	1885	172	A Case of Locomotor Ataxia.
Hadley, E.	Indianapolis	1885	55	Addison's Disease—Report of a Case.
Harding, M. H.	Lawrenceburg	1853	24	Report of Committee on Practice of Medicine.
"	"	1866	21	President's Address.
"	"	1885	114	Notes on an Epidemic of Erysipelas and Puerperal Fever, at Manchester, Indiana, during the Winter of 1842-3.
Hamilton, A. A.	Marion	1863	128	Case of Umbilical Hernia.
"	"	1880	49	Empyema—Report of a Case.
Harvey, Thos. B.	Indianapolis	1861	39	Report on New Remedies.
"	"	1863	37	Puerperal Eclampsia,
"	"	1871	113	Prevention and Treatment of Laceration of the Perineum.
"	"	1881	1	President's Address—The Advance in Medicine.
"	"	1883	245	Laceration of the Cervix Uteri.
Harvey, W. F.	Plainfield	1863	31	Cinchona and the Extracts from it.
"	"	1866	56	Cholera.
"	"	1869	39	Discussion on Puerperal Convulsions.
"	"	1875	45	Case of Puerperal Eclampsia.
"	"	1875	55	Fibroid and Fibro-Cystic Tumors of the Uterus.
"	"	1876	86	Tobacco—Its Properties and Uses.
Haymond, W. S.	Indianapolis	1867	100	The Collapsed Stage of Cholera.
"	"	1880	73	Human Longevity.
"	"	18[illegible]	141	Erysipelas.
Haughton, R. E.	"	18[illegible]	23	Treatment of Syphilitic Diseases without the use of Mercury.
"	"	1860	50	Diphtheria.
"	"	1865	47	Cerebro Spinal Meningitis.
"	"	1866	60	Pathology and Treatment of Cholera.
"	"	1867	122	Tracheotomy in Cynanche Trachealis and Diphtheritic Laryngitis.
"	"	1870	71	Reduction of Dislocation of the Hip—Prinples of the Flexion Method.
"	"	1871	143	Influence in Disease of the Nervous System.
"	"	1872	11	Malignant and Semi-Malignant Growths.
"	"	1872	85	Cases of Lithotomy.
"	"	1873	37	Thrombosis of Arteries of Extremeties.
"	"	1874	83	Does anything pass the Capillaries, except Normal Blood Cells?
"	"	1875	1	President's Address—Life, Mind Force or Vital Dynamics.
"	"	1877	61	Dilation and Contraction of Blood Vessels and Tubular Structures.
"	"	1879	144	A Case of Fracture of the Cervical Spine.
"	"	1881	75	Amputation of the Knee Joint.
Henley, A.	Fairmount	1880	212	Twins—Delay of second child—Artificial Delivery—Death.
Hehm, J. H.	Peru	1876	1	President's Address—"State Medicine."
Hervey, J. W.	Oakland	1873	99	Utility of Force in Medicine.
"	Indianapolis	1876	134	A State Board of Health and an Asylum for Chronic Inebriates.
"	"	1877	51	How to Secure Medical Legislation.
"	"	1880	162	Public Hygiene and Synteretic Jurisprudence.

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NAME OF AUTHOR.	RESIDENCE.	DATE.	PAGE.	NAME OF PAPER.
Hervey, J. W.	Indianapolis	1881	37	Mental Hygiene.
Hibberd, Jas F.	Richmond	1861	22	Report on Medical Education.
"	"	1862	40	Inflammation as seen by the light of Cellular Pathology.
"	"	1863	11	President's Address.
"	"	1865	30	The Liver.
"	"	1867	56	Bile.
"	"	1868	17	Pathology of Diphtheria.
"	"	1871	201	Progress of Medicine.
"	"	1878	53	Infantile Convulsions—Treatment during Paroxysms.
"	"	1881	227	Report on Necrology.
"	"	1882	179	Bacteria.
"	"	1882	193	Report on Necrology.
"	"	1883	261	Report on Necrology.
"	"	1884	112	Post-Partum Hemorrhage.
"	"	1884	206	Report of Committee on Necrology.
"	"	1885	131	Post-Partum Hemorrhage.
"	"	1885	212	Report of Committee on Necrology.
Hobbs, Wilson	Knightstown	1870	101	Disease of the Skull—Four Operations for Removal.
"	"	1871	51	Chloroform and Chloral, in the Treatment of Puerperal Convulsions.
"	"	1874	1	President's Address—Alcohol and its Uses.
"	"	1876	95	Counter Injuries of the Pelvis.
"	"	1877	33	Medical Witness.
"	"	1878	13	Medical Witness.
"	"	1885	46	Strangulated Hernia—Two Puzzling Cases.
Hodges, E. F.	Indianapolis	1884	147	Malpractice.
Hollis, Samuel	Grant Co.	1882	147	Jaundice as a Symptom of Disease.
How, B. J.	Orleans	1877	101	Case of Anencephalia.
Humphries, L.	South Bend	1858	34	Interchange of Published Transactions.
"	"	1878	60	Conservative Surgery.
Hutchinson, David	Mooresville	1856	37	Report on Microscopical Pathology.
"	"	1858	28	Report on Microscopy.
"	"	1860	13	President's Address.
"	"	1882	35	The Advances of Uterine Pathology and Therapeutics.
"	Winstead, Iowa.	1864	24	Fevers of Indiana.
Iutzi, Joseph	Richmond	1882	136	Heredity and its Relation to Disease.
Irwin, S. G.	Crawfordsville	1874	183	Biographical Sketch of Thos. W. Fry, M. D., Crawfordsville.
Jameson, P. H.	Indianapolis	1857	35	Veratrum Viride.
Johnson, L. C.	Fountain City	1881	97	Infectious Diseases.
"	"	1883	130	Management of the Puerperal State.
Johnson, L. R.	Cambridge City.	1856	34	Abstract of Report to Cambridge City Association, 1856.
"	"	1866	46	Thoughts on Asiatic Cholera.
Kemper, G. W. H.	Muncie	1871	181	Exophthalmic Goitre.
"	"	1875	23	Retention in Utero of the Dead Fœtus.
"	"	1876	119	Sequel to a Case of Retained Fœtus.
"	"	1879	120	Affections of the Gall Bladder, tending to result in Cutaneous Biliary Fistula.
"	"	1882	172	Primary Cancer of the Lungs.
"	"	1884	159	Angel-Wing Deformity.
Kersey, Vierling	Richmond	1855	25	Meteorological Report for 1854-5.
"	"	1855	22	Reports to the Cambridge City Medical Association.
"	"	1865	57	Cerebro Spinal Meningitis.
"	"	1866	30	Pathology and Treatment of Cholera.
"	"	1867	47	President's Address—"Physics and Physicians."
"	"	1868	24	Review of the Biliary Functions.
"	"	1869	10	Why Doctors Disagree.
"	"	1870	133	Medical Rank in the U. S. Navy.
"	"	1871	129	Case of Muscular Atrophy.
"	"	1873	19	Case of Obscure Disease.
"	"	1874	145	Biographical Sketch of—
King, E. W.	New Albany	1879	43	Statistics of Placenta Prævia.
"	"	1881	168	Statistics of Placenta Prævia.
Kitchen, J. M.	Indianapolis	1857	43	Purgatives in Dysentery.
Knefler, Nathan	"	1858	36	Uses and Abuses of Mercury.
Kyle, F. M.	Manchester	1883	44	Fœtal Medication.
Lamb, Jas.	Aurora	1880	119	Disease of the Cervix Uteri.
Laughlin, E. D.	Orleans	1874	97	Canman's Stethescope as a Means of Diagnosis in Fracture.

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NAME OF AUTHOR.	RESIDENCE.	DATE.	PAGE.	NAME OF PAPER.
Leech, F. F	Attica	1875	77	Two Cases of Lithotomy.
Lockhart, Wilson	Danville	1862	35	Sequela of Diphtheria.
"	"	1864	27	Report on Cases of Vaccination.
"	"	1865	13	President's Address.
Lomax, Wm	Marion	1858	23	Report on Surgery.
"	"	1851	7	Observations of Meteorological Facts in Connection with Disease.
"	"	1871	97	Responsibility of Physicians, and the Objects and Duties of Ind. State Med. Soc.
"	"	1877	91	Two Cases of Perityphlitis.
"	"	1880	108	A Case of Ovariotomy, with Recovery.
"	"	1881	134	Injury of the Head, with Fracture of Skull.
"	"	1882	49	Case of Delivery by Embryotomy without the Use of Cutting Instruments.
"	"	1885	27	Chronic Alcoholism.
Lopp, Wm. H	Columbus	1883	118	Quacks and Quackery in Indiana.
McCaskey, G. W	Fort Wayne	1885	68	Geographical Pathology of Consumption.
McLean, George	New Albany	1853	58	Rep. on the Progress of Medical Chemistry.
"	"	1854	51	Progress of Medical Chemistry.
McClelland, J. S	Jefferson	1854	43	Trembles, or Milk Sickness.
McLelland, James S	New Albany	1856	48	Report on Stomatitis Materna.
McMahan, W. R	Huntingburg	1880	26	Icteric Form of Pernicious Fever.
McMurray, J. S	Frankfort	1881	133	Heart Clot.
"	"	1882	61	Regular Physicians and Practice.
Marsee, Jos. W	Indianapolis	1884	194	Treatment of Fracture of the Femur.
Martin, S. M	Greenfield	1875	35	Puerperal Eclampsia.
Mayo, W	Lafayette	1854	68	Pathological Indication of the Urine.
Mears, G. W	Indianapolis	1851	31	Report on the Duration of Pregnancy.
"	"	1852	21	President's Address.
"	"	1868	100	Placenta Prævia.
"	"	1870	25	Treatment of Puerperal Hemorrhage.
"	"	1871	211	Biographical Sketch of John S. Bobbs.
"	"	1876	55	Treatment of Puerperal Eclampsia.
"	"	1878	102	Etiology and Treatment of Unavoidable Hemorrhage.
Meeker, Daniel	Laporte	1856	53	Report on Diseases of the Eye.
"	"	1857	29	On Fractures and False Joints.
"	"	1857	57	President's Address.
"	"	1858	40	Fractures and False Joints.
"	"	1859	34	" " " "
Mendenhall, E	Zionsville	1870	47	The Utility of Ergot in Facilitating Labor.
Moffett, John	Rushville	1862	47	Progress of Medicine.
"	"	1864	13	President's Address.
"	"	1867	108	Cerebro Spinal Meningitis.
"	"	1869	15	General Anasarca—A Case, with Remarks.
Munford, S. E	Princeton,	1872	7	Case of Hydrocele, with Cartilaginous Tissue
"	"	1883	110	Cases of Injury to the Head.
"	"	1884	1	President's Address—A Question in State Medicine.
Myers, Wm. H	Fort Wayne	1883	138	On Shock.
"	"	1885	180	Ganglions, with Suggestions on Treatment.
Newland, Benj	Bedford	1879	1	President's Address—Relation of Legislation to Sanitary Protection.
Oppenheimer, L. S	Seymour	1881	164	Improved Test for Sugar in the Urine.
"	"	1883	242	A Case of Rupture of the Placenta.
Parvin, Theophilus	Indianapolis	1857	23	Diseases of the Eye and Ear.
"	"	1859	46	Obituary of Nathan Knefler.
"	"	1862	16	President's Address.
"	"	1866	78	Vaginal Fistula.
"	"	1868	90	Report on Diseases of Women.
"	"	1871	11	Placental Extraction and Placental Expression.
"	"	1873	113	Fibrous Polypus of Rectum.
"	"	1876	34	Treatment of Placenta Prævia.
Passage, H. V	Peru	1870	67	Reduction of Dislocation of the Hip Joint.
Pearson, Charles	Indianapolis	1882	126	Puerperal Eclampsia.
Pennington, Joel	Milton	1873	9	President's Address-Reminiscences of Practice, and Biographical Sketches of Physicians in the Early History of Indiana.
"	"	1877	113	Hereditary Transmission of Disease.
Petro, B. L	Covington	1883	48	Bright's Disease.
Porter, Miles F	Fort Wayne	1874	182	Fracture of the Clavicle, with a New Method of Treatment.
Proceedings of Indiana State Med. Con		1849	1	
Preston, A. G	Greencastle	1880	47	Case of Arsenical Poisoning.

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NAME OF AUTHOR.	RESIDENCE.	DATE.	PAGE.	NAME OF PAPER.
Preston, A. G.	Greencastle	1882	21	Report of Case of Complete Transverse Rupture of Vagina at Junction with Uterus, in which no Hemorrhage occurred.
Rhea, John	New Castle	1860	58	Report from the New Castle Med. Society.
Report on Anæs't Agts.		1851	25	
Richmond, C.	Kokomo	1879	19	Diseases Prevalent in the Settlement of Kokomo.
Rooker, J. I.	Castleton	1864	35	Camp Diarrhea.
"	"	1873	95	How to Obtain Practice.
"	"	1877	89	Indiscriminate Use of Hypodermic Medication.
Rowland, George	Covington	1883	172	Medical Legislation.
Ryan, W. Byford	Willow Branch	1885	63	On the Treatment of Cholera Infantum.
Schell, Walker	Spencer	1885	85	The Infectious Nature of Consumption.
Sexton, Marshall	Rushville		107	Rupture of Uterus and Vagina.
"	"	1869	31	Case of Dislocation of Femur, Upward and Backward, Reduced by Manipulation.
"	"	1882	1	President's Address — Boards of Health, Medical Legislation, and the Rights and Duties of Physicians.
Seymour, F. A.	Jeffersonville	1872	133	Biographical Sketch of R. Curran.
Sloan, John	New Albany	1852	55	Report of the Committee on Surgery.
Stemen, C. B.	Fort Wayne	1880	58	Gall Stones.
"	"	1885	157	Trephining or Resection of the Spine, with a Report of Three Cases.
Stevens, Thad. M.	Indianapolis	1871	193	Treatment of the Criminal Insane.
"	"	1872	51	Medico-Legal Science.
"	"	1874	17	Report on the Medical History of Indiana.
"	"	1875	65	State Board of Health.
"	"	1875	79	Report on the Medical History of Indiana.
"	"	1878	67	Report on Public Hygiene in Indiana.
"	"	1880	193	Sanitary Survey of Indianapolis.
"	"	1881	23	State Medicine.
"	"	1882	56	The Need of Hospitals in Indiana Constructed and Controlled by State Authority.
"	"	1883	70	Dr. Stevens *v.* Indiana State Board of Health
"	"	1883	213	The Relative Value of Bovine and Humanized Vaccine Virus, Practically Considered.
"	"	1883	239	Report of Committee on Medical Legislation
"	"	1884	24	State Medicine.
Stillson, J. O.	"	1884	56	Specialties—their Relation to General Practice.
"	"	1885	36	Cancer of the Eye—Histological Remarks.
Stone, R. French	"	1882	98	Epidemic Cerebro Spinal Meningitis.
Sutcliffe, J. A.	"	1879	137	Perineal Section for Stricture of the Urethra
"	"	1883	40	Report of a Case of Stricture of the Urethra.
Sutton, George	Aurora	1853	107	Report on Asiatic Cholera as it Prevailed in this State in 1849-50-51-52.
"	"	1853	176	Report on Milk Sickness as it Prevails in Ind.
"	"	1856	41	Report on Erysipelas.
"	"	1867	85	Report on Cholera.
"	"	1868	51	Report on Cholera.
"	"	1870	1	President's Address—Man's Power over Nature and Medicines as Means by which he Aids and Controls the Laws of Life.
"	"	1873	61	Report of Diseases of Indiana for 1872.
"	"	1875	109	Report on Trichinosis.
"	"	1876	139	Reduction of Hip-joint with Fulcrum in Groin.
"	"	1878	111	Placenta Prævia.
"	"	1883	53	Parasites.
"	"	1885	104	A Review of the Epidemics that have Occurred in South-eastern Indiana during the past Fifty Years, etc.
Sweringen, H. V.	Fort Wayne	1882	132	Laceration of the Female Perineum.
"	"	1883	200	The Treatment of Retained Placenta after Abortion.
"	"	1884	95	Intra-Uterine Injections of Carbolic Acid.
Todd, L. L.	Indianapolis	1879	187	Therapeutic Properties of Opium.
Todd, R. N.	"	1871	1	President's Address—The Medical Profession and the Administration of Justice.
Thomas, Mary F.	Richmond	1880	184	Women Physicians in Hospitals for Insane Women.
"	"	1882	79	Report of Committee on Women Physicians in Hospitals for Insane Women.

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NAME OF AUTHOR.	RESIDENCE.	DATE.	PAGE.	NAME OF PAPER.
Thomas, Mary F.	Richmond	1883	228	The Influence of the Medical Colleges of the Regular School, of Indianapolis, on the Medical Education of the Women of the State.
"	"	1884	203	Women Physicians for Insane Women.
"	"	1885	125	Some Thoughts on Post-Partum Hemorrhage.
Thompson, J. L.	Indianapolis	1866	69	The Radical Treatment of Inguinal Hernia.
"	"	1872	31	Anomalies of Refraction.
"	"	1875	141	Intra-Ocular Diseases.
"	"	1879	152	Some Diseases of the Eye in which Operative Interference is Indispensable.
"	"	1884	68	Asthenopia.
Van Nuys, T. C.	Evansville	1872	41	Researches in Arsenical Poisoning.
"	"	1875	179	Biographical Sketch of Isaac Casselberry, M. D., Evansville.
Van Vorhis, F. J.	Indianapolis	1870	57	Physical Influence upon the Organization of Structure.
"	"	1874	77	Cerebro Spinal Meningitis.
"	"	1876	14	Hysteria.
"	"	1880	141	Expert Evidence—What it is.
Vinnedge, W. W.	Lafayette	1874	107	Gronendyke *vs.* Thomas W. Fry—An Opinion of the Law in a Suit for alleged Malpractice by D. P. Vinton, Esq.
"	"	1879	36	Death from Chloroform.
Wagner, Theodore A.	Indianapolis	1884	173	Small-Pox.
Walker, I. C.	"	1876	122	Final Illness of Dr. James S. Athon, M. D., Indianapolis.
"	"	1880	44	Case of Abnormal Growth on the Brain.
Walker, Geo. B.	Evansville	1855	37	Report on Diseases and Displacements of the Uterus.
Wallace, B.	Franklin	1884	49	Foreign Bodies in the Air Passages.
Waring, Wm.	Richmond	1865	38	Spurious Vaccination.
Washburn, Isaac B.	Logansport	1874	101	Medical Legislation.
Waterman, L. D.	Indianapolis	1872	101	Secondary Effects of Remedies.
"	"	1876	103	Case of Lithotomy, with Peculiar Features.
"	"	1878	1	State Preventive Medicine.
"	"	1881	86	The Cold Bath in the Hyper-Pyrexia of Pneumonia.
Weddington, S. C.	Jonesboro	1877	103	Cancer.
"	"	1877	119	A Case of Placenta Prævia.
"	"	1880	35	Kakonemia or Pernicious Anemia.
"	"	1885	187	Tumors of the Breast.
Weist, J. R.	Richmond	1867	70	Foreign Bodies in the Air Passages.
"	"	1878	121	Prize Essay—The Causes, Nature and Treatment of Cerebro Spinal Meningitis.
"	"	1880	1	President's Address—Problems in Relation to the Prevention of Disease.
"	"	1870	129	Report on Board of Public Charities.
"	"	1882	22	Hot Water in Surgical Practice.
"	"	1884	132	Civil Malpractice Suits.
Wertz, T.	Jasper	1881	89	Nasal Catarrh.
West, Calvin	Hagerstown	1857	41	Amputation at the Shoulder Joint.
"	"	1858	48	Fracture at the Base of the Acromion.
"	"	1858	49	Report on Microscopy.
"	"	1859	40	Report on the Microscope.
"	"	1861	34	Report on the Microscope.
Wetherill, Charles M.	Lafayette	1860	24	Artificial Lactation.
Winton, Horace	N. Manchester	1859	45	Two Surgical Cases.
Woodburn, J. H.	Indianapolis	1885	1	President's Address—Have we really Advanced in Knowledge and Improved in Practice?
Woods, R. A.	Seymour	1885	23	Should Consultations be Encouraged or Discouraged?
Woodworth, B. S.	Fort Wayne	1861	12	President's Address.
"	"	1865	40	Dysentery as it Prevailed in Allen County in 1864.
Woolen, G. V.	Indianapolis	1870	83	Syphilis—Its Pathology and Treatment.
Woolen, L. J.	Moorefield	1872	25	An Epidemic of Parotitis in Switzerland Co.
"	Vevay	1884	188	Adenia.
Worrell, J. P.	Terre Haute	1883	25	Deafness among School Children.
Wright, C. E.	Indianapolis	1870	119	Purulent Aural Catarrh.
"	"	1871	93	Paralysis of Accommodation of the Eye.
"	"	1872	67	Diseases of the Eye and Ear.
"	"	1873	21	Diseases of the Eye and Ear.
Yandell, Lunsford P.	Louisville, Ky.	1871	41	A Plea for Anæsthetics in Midwifery.

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LIST OF MEMBERS

OF THE

INDIANA STATE MEDICAL SOCIETY.

ALLEN COUNTY.

Officers.

Miles F. Porter, Pres.
K. K. Wheelock, Sec.
Christian B. Stemen, Treas.

Censors.

H. McCullough.
B. S. Woodworth.
G. W. McCaskey.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Ayres, M. P	Fort Wayne	1866.	Honorary. Pres. State Soc. 1871.
Barrnett, W. W	Fort Wayne	1886.	
Brooks, William H	Fort Wayne	1866.	
Buchman, Alpheus P	Fort Wayne	1876.	Suspended.
Dills, Thomas J	Fort Wayne	1876.	Withdrawn.
Devilbiss, A	Fort Wayne	1884.	Removed.
Fleming, W. L	Fort Wayne	1885.	Removed.
Gregg, James S	Fort Wayne	1866.	Vice Pres. State Soc. '84, Pres. '85.
Greenawalt, George L	Fort Wayne	1883.	Withdrawn.
Greenwell, Franklin	Fort Wayne	1884.	
Kesler, A. J	Fort Wayne	1886.	
Knode, R. S	Fort Wayne	1885.	
McCaskey, G. W	Fort Wayne	1881.	
McCullough, H	Fort Wayne	1883.	
McCausland, G. W	Fort Wayne	1884.	Withdrawn.
Proegler, Carl	Fort Wayne	1879.	Suspended.
Porter, Miles F	Fort Wayne	1881.	
Rosenthal, I. M.	Fort Wayne	1866.	Vice Pres. State Soc. 1870.
Ruhl, W. D	Sheldon	1884.	
Schmidt, Charles	Fort Wayne	1866.	Honorary.
Sivers, E. L	Fort Wayne	1886.	
Stults, C. E	Fort Wayne	1886.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Stults, E. J	Fort Wayne	1886.	
Stemen, Christian B	Fort Wayne	1878.	
Stemen, George C	Fort Wayne	1878.	
Sweringen, Hiran von	Fort Wayne	1878.	
Woodworth, B. S	Fort Wayne	1886.	Pres. State Soc. 1860.
Wheelock, K. K	Fort Wayne	1881.	

BARTHOLOMEW COUNTY.

Officers.	*Censors.*
J. J. Riley, Pres.	W. H. Lopp.
I. S. Clark, Vice Pres.	A. J. Banker.
A. J. McLeod, Sec.	A. J. McLeod.
J. S. Arwine, Treas.	

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Arnold, J. W	Columbus	1885.	Removed.
Arwine, J. S	Columbus	1881.	
Banker, A. J	Columbus	1881.	
Butler, C. H	Clifford	1881.	
Clark, I. S	Columbus	1881.	Suspended.
Cosby, G. O	Burnsville	1881.	
Falk, F	Columbus	1881.	
Hawley, K. D	Elizabethtown	1882.	
Lopp, W. H	Columbus	1881.	
McLeod, A. J	Columbus	1881.	
McCoy, George T	Columbus	1884.	
Norton, F. D	Petersville	1881.	
Pfeiffer, R. N	Hope	1884.	Removed.
Regennas, R. G	Hope	1883.	
Roesgen, J. P	Columbus	1886.	
Riley, J. J	St. Louis Crossing	1881.	
Smalley, J. K	Hartsville	1884.	
Smith, T. R	Columbus	1881.	
Voris, S. M	Columbus	1881.	
Winterroad, N. S	Hope	1881.	

Society meets on the third Tuesday of each month.

BENTON COUNTY.

Officers.	*Censors.*
J. W. Green, Pres.	J. A. Gray.
A. W. Wells, Sec.	J. M. G. Beard.
J. S. Mavity, Treas.	J. Kolb.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Beard, J. M. G.	Ambia	1875.	
Gray, J. A	Otterbein	1875.	
Green, J. W.	Boswell	1875.	
Kolb, J.	Oxford	1874.	
Mavity, J. S.	Fowler	1876.	
Wells, A. W.	Oxford	1874.	
Whitcomb, J. H.	Boswell	1875.	

Our Society meets on the first Tuesday in May and the last Tuesday in October. Called sessions are in order at any time, and are frequently made.

BLACKFORD COUNTY.

Officers.	*Censors.*
J. H. Morrison, Pres.	W. W. Wilt.
H. C. Davisson, Sec.	C. R. Mason.
C. Q. Shull, Treas.	L. C. Landon.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Clouser, N. D.	Hartford City	1885.	
Davisson, H. C	Hartford City	1866.	
Drayer, Peter	Hartford City	1866.	
Hammon, E. W.	Montpelier	1883.	Removed.
Harrold, J. R.	Roll	1881.	
Landon, L. C.	Priam	1874.	
Mason, C. R.	Hartford City	1870.	
Morrison, J. H	Montpelier	1885.	
Shull, C. Q.	Montpelier	1866.	
Wilt, W. W.	Montpelier	1873.	

Our Society meets on the fourth Thursday of each month.

BOONE COUNTY.

Officers.	*Censors.*
D. C. Scull, Pres.	R. E. Jones.
David R. Walker, Vice Pres.	J. M. Kane.
Thomas H. Lane, Sec.	D. R. Walker.
W. H. Shulse, Ass't Sec.	
D. R. Walker, Treas.	

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bennington, A. M.	Lebanon	1876.	
Bounel, Thomas A.	New Brunswick	1876.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bounel, M. H	Lebanon	1877.	
Burke, George L	Jamestown	1877.	
Clark, Andrew J	Zionsville	1885.	
Cotton, Henry T	Zionsville	1880.	
Duzan, George W	Zionsville	1877.	
Hardy, John S	Whitestown	1877.	
Heady, W. S	Jamestown	1879.	
Jones, R. E	Lebanon	1880.	
Kane, John M	Northfield	1884.	
Lane, Thomas H	Lebanon	1873.	
Nickey, Allen S	Elizaville	1877.	
Porter, Albert G	Lebanon	1873.	
Porter, John R	Lebanon	1873.	
Porter, Wm. D	Lebanon	1877.	
Rose, M. H	Thorntown	1873.	Suspended.
Reagan, Jesse S	Reese's Mill	1885.	
Scull, David C.	Lebanon	1879.	
Shulse, Wm. H	Lebanon	1873.	
Smith, C. H	Lebanon	1874.	
Steelsmith, John M	Terhune	1877.	
Trowbridge, Reese	Lebanon	1880.	
Umbershine, Chas. D	Reese's Mill	1885.	
VanNuys, D. H	Lebanon	1886.	
Walker, David R	Reese's Mill	1878.	
Ware, W. H	Cason	1884.	

Our Society meets on the first Tuesday in each month.

CARROLL COUNTY.

Officers.

Chas. Angell, Sr., Pres.
E. W. H. Beck, Vice Pres.
W. Smith, Sec.
W. F. Sharer, Treas.

Censors.

S. T. Noland.
Chas. Angell, Jr.
W. F. Shover.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Angell, Chas. Sr.	Pittsburg	1877.	
Angell, Chas. Jr.	Delphi	1882.	
Beck, E. W. H.	Delphi	1877.	
Noland, S. T	Delphi	1877.	
Sharer, W. F	Delphi	1877.	
Smith, Wickliffe	Delphi	1877.	

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CASS COUNTY.

Officers.	*Censors.*
Wm. H. Bell, Pres.	D. N. Fansler.
W. B. Hunter, Vice Pres.	F. A. Busjahn.
J. Z. Powell, Sec. and Treas.	B. C. Stevens.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bell, Wm. H.	Logansport	1873.	
Bushjahn, F. A	Logansport	1878.	
Cady, N. W	Logansport	1877.	
Fansler, D. N	Logansport	1880.	
Herman, John	Logansport	1874.	
Hunter, W. B	Anoka	1885.	
Lester, H. C	Logansport	1880.	
Powell, J. Z	Logansport	1874.	
Sterritt, J. E	Logansport	1881.	
Stevens, B. C	Logansport	1873.	
Thomas, James	Royal Center	1881.	

Our Society meets on the last Thursday of each month.

CLARK COUNTY.

Officers.	*Censors.*
J. M. Reynolds, Pres.	N. Field.
D. C. Peyton, Vice Pres.	W. H. Sheets.
I. N. Ruddell, Sec. and Treas.	T. A. Graham.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Covert, G. M	Sellersburg	1885.	
Curtis, G. L	Jeffersonville	1883.	Honorary.
Fouts, W. D	Jeffersonville	1877.	
Field, N	Jeffersonville	1877.	Pres. State Soc. '68.
Graham, T. A	Jeffersonville	1877.	
Haymaker, G. W	Charlestown	1882.	
McBride, C. R	Jeffersonville	1877.	
McClure, D	Jeffersonville	1877.	
McCoy, W. N	Jeffersonville	1877.	
McKinney, M. V	Jeffersonville	1882.	
Peyton, D. C	Jeffersonville	1886.	
Reynolds, J. M	Memphis	1885.	
Ruddell, I. N	Jeffersonville	1881.	
Sheets, W. H	Jeffersonville	1877.	
Williams, L. L	Utica	1882.	

This Society meets on the first Tuesday in November, 1886.

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CLINTON COUNTY.

Officers.	*Censors.*
Oliver Gard, Pres.	C. Chittick.
W. T. Cooper, Vice Pres.	G. W. Brown.
J. S. McMurray, Sec.	S. O. Knapp.
J. M. C. Adams, Treas.	

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Adams, J. M. C	Frankfort	1880.	
Brown. G. W	Frankfort	1880.	
Bogan, E. W	Kirklin	1880.	
Chittick, A. J	Hillsburg	1885.	
Chittick, Charles	Burlington	1883.	
Cooper, W. T	Circleville	1881.	
Cox, T. B	Frankfort	1880.	
Dunn, W. P	Frankfort	1880.	Withdrawn.
Fall, W. D	Kirklin	1880.	
Gentry, J. M	Frankfort	1880.	Withdrawn.
Gard, Oliver	Frankfort	1880.	
Holmes, J. H	Manson	1881.	
Knapp, S. O	Frankfort	1885.	
McMurray, J. S	Frankfort	1880.	
Morrison, O. A. J	Middle Fork	1880.	
Parker, Joseph	Colfax	1883.	
Schwinn, E. E	Kirklin	1883.	
Smith, H. G	Circleville	1880.	
Strange, Wm	Frankfort	1880.	
Traubaugh, W. A	Cuttler	1883.	
Yonky, W. P	Rossville	1885.	

This Society meets on the first Thursday in May, August, November and February.

Culmer, Geo. F.....Odon.....1886. Daviess county.

DEARBORN COUNTY.

Officers.	*Censors.*
H. H. Sutton, Pres.	
C. G. Walters, Vice Pres.	
M. L. Bond, Sec.	
W. C. Henry, Treas.	
R. C. Bond, Librarian.	

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Barkley, John	Farmer's Retreat	1881.	
Bond, R. C	Aurora	1867.	
Bond, E. P	Lawrenceburg	1844.	
Bond, Marc L	Aurora	1886.	
Bowers, A. J	Moore's Hill	1867.	
Brodbeck, W. H., D. D. S.	Aurora	1884.	
Craig, T. E	Lawrenceburg	1867.	
Collins, S. H	Lawrenceburg	1882.	
Davis, J. R	Morris	1877.	Honorary.
Fermier, P	Weisburg	1872.	
Freeman, E. D	Osgood	1884.	Honorary.
Freeland, J. F	Manchester	1885.	
Gatch, J. D	Lawrenceburg	1872.	Vice Pres. State Soc. '79.
Heaton, Conley	Moore's Hill	1878.	
Haines, A. B	Aurora	1867.	
Harding, M. H	Lawrenceburg	1844.	Pres. State Soc. '65, V. P. '53–'55.
Henry, W. C	Aurora	1872.	[Deceased.
James, D. H	Aurora	1881.	Removed.
Kyle, F. M	Manchester	1869.	
Lamb, James	Aurora	1868.	
Louden, L. A	Wilmington	1885.	
Miller, C. B	Lawrenceburg	1867.	
Newfort, C	Sunman	1885.	Honorary.
Rectanus, F	Aurora	1867.	
Rosser, David	Moore's Hill	1884.	
Smith, T. C	Aurora	1878.	
Spaulding, John	Hartford	1878.	Honorary.
Sutton, George	Aurora	1844.	Pres. State Soc. '70, V. Pres. '55.
Sutton, H. H	Aurora	1879.	[Deceased.
Terrill, W. H	Petersburg, Ky	1867.	Honorary. Deceased.
Terrill, W. M	Lawrenceburg	1880.	
Treon, Fred	Aurora	1879.	
Vincent, H. C	Guilford	1867.	
Walters, C. G	Lawrenceburg	1867.	

This Society meets on the last Tuesday of each month.

DECATUR COUNTY.

Officers.	*Censors.*
W. H. Wooden, Pres.	D. J. Ballard.
Wm. Bracken, Vice Pres.	R. M. Thomas.
J. V. Schofield, Sec. and Treas.	Thomas Johnson.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Alexander, John H	Clifty	1877.	
Ballard, D. J	St. Paul	1883.	
Bobbett, John H	Greensburg	1877.	
Bracken, Wm	Greensburg	1877.	
Charlton, N. E	Forest Hill	1880.	Suspended.
Crawford, George S	Clifty	1885.	
Dowden, A. W	New Point	1878.	Suspended.
Johnson, Thomas	Greensburg	1878.	
Leach, E. W	Manilla	1881.	Withdrawn.
Scoby, D. L	Greensburg	1885.	Suspended.
Schofield, J. V	Harris City	1879.	
Smith, J. L	Clarksburg	1882.	
Swem, E. B	Greensburg	1877.	
Tevis, Joel T	St. Paul	1882.	Suspended.
Thomas, R. M	Sandusky	1883.	
Webb, W. H	Adams	1877.	
Wooden, Jno. L	Greensburg	1877.	
Wooden, W. H	Greensburg	1879.	

This Society meets on the first Monday of every month.

DEKALB COUNTY.

Officers.

James N. Chamberlain, Pres.
J. B. Casebeer, Vice Pres.
J. S. Barnett, Vice Pres.
A. Byron Darby, Sec.
V. M. Swarts, Treas.

Censors.

B. S. Sheffer.
J. B. Casebeer.
F. W. Fanning.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Barnett, Jos. S	Butler	1882.	
Bennett, Jos. B	Butler	1882.	
Casebeer, J. B	Auburn	1882.	
Chamberlain, James N	Waterloo	1883.	
Cowan, Jno. A	Auburn	1882.	Deceased.
Darby, A. Byron	Waterloo	1883.	
Elson, R	Auburn	1882.	Removed.
Emanuel, G. E	Spencerville	1883.	
Fanning, Fred. W	Butler	1882.	
Farrington, A. S	Waterloo	1886.	
Ford, J. H	Auburn	1882.	
Fosdick, Edwin L	Butler	1882.	Removed.

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Lewis, James V	Auburn	1883.	
Littlefield, J. J	Auburn	1882.	Removed.
Madden, Wm. H	Butler	1882.	Withdrawn.
Matheny, T. G	Auburn	1882.	
Newsbaum, ——	Corunna	1886.	
Seabring, D. A	Auburn	1882.	
Sheffer, B. S	Blair	1882.	
Swartz, D. J	Auburn	1882.	
Swartz, Mrs. V. M	Auburn	1882.	

This Society meets on the first Thursday of each month.

DELAWARE COUNTY.

Officers.

A. H. Good, Pres.
G. R. Green, Vice Pres.
A. B. Bradbury, Sec.
G. W. H. Kemper, Treas.

Censors.

T. J. Bowles.
S. Martin.
D. R. Armitage.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Armitage, David R	Muncie	1878.	
Ames, George F	Eaton	1885.	
Bowles, Thos. Jefferson	Muncie	1879.	
Boyden, Wilber J	Muncie	1878.	
Bradbury, Allison B	Muncie	1879.	
Day, Benjamin F	Harrison	1882.	Suspended.
Downing, J. R	Yorktown	1882.	Suspended.
Eastes, William T	Wheeling	1883.	
Good, Alexander H	Selma	1882.	
Green, George R	Muncie	1879.	
Jump, Samuel V	New Burlington	1879.	
Kemper, Geo. Wm. H	Muncie	1878.	Pres. State Soc. '86.
Martin, Simeon	Daleville	1884.	
Marshall, R	Cowan	1881.	
Munsey, David O	New Corner	1878.	
Murray, A. L	Eaton	1878.	
Murray Albert P	Albany	1882.	
Reasoner, O. I	Shideler	1879.	
Ross, Jont	Blountsville	1880.	
Skiff, Clark	Selma	1878.	
Smith, Charles W	Muncie	1884.	
Winton, Robert	Muncie	1878.	Deceased.

This Society meets on the first Tuesday of January, March, May, July, September and November.

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DUBOIS COUNTY.

Officers.	*Censors.*
W. M. Demott, Pres.	T. Wertz.
P. H. Kempf, Vice Pres.	G. P. Williams.
E. J. Kempf, Sec.	A. E. Glezen.
E. G. Lukemeyer, Asst. Sec.	W. H. Wells.
C. W. Swartz, Treas.	J. P. Salb.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Demott, W. M	Haysville	1874.	
Glezen, A. E.	Ireland.	1874.	
Kempf, E. J	Jasper	1878.	
Kempf, P. H	Ferdinand	1882.	
Lukemeyer, E. G.	Huntingburg	1885.	
McMahan, W. R.	Huntingburg	1874.	
McCown, C. C.	Ireland	1884.	
Montgomery, G. B	Huntingburg	1884.	Withdrawn.
Parr, G. L.	Ireland	1875.	
Rust, Frederick	Holland	1874.	
Salb, J. P	Jasper	1881.	
Schwartz, C. W	Huntingburg	1874.	
Stork, H. W	Holland	1878.	
Wells, Will. H	Jasper	1883.	
Wertz, T	Jasper	1874.	
Williams, G. P	Huntingburg	1874.	

This Society meets on the second Tuesday in April and third Tuesday in October.

ELKHART COUNTY.

Officers.	*Censors.*
C. S. Frink, Pres.	
F. C. Eckelman, Vice Pres.	
W. A Neal, Sec. and Treas.	

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bowers, C. C.	Bristol	1882.	
Cummins, S. M	Elkhart	1882.	
Daugherty, C. A	South Bend	1886.	
Dunning, L. H	South Bend	1882.	
Eckelman, F. C	Elkhart	1882.	
Frink, C. S	Elkhart	1882.	
Green, J. B	Mishawaka	1882.	
Harding, P. D	Goshen	1882.	
Harrington, O. B	Elkhart	1882.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Heatwole, J. H	Goshen	1882.	
Irwine, A. J	Goshen	1882.	
Jennings, J. W	Millersburg	1882.	
Latta, M. M	Goshen	1882.	Vice Pres. State Soc. '58.
Miles, F. L	Elkhart	1882.	
Montgomery, H. T	South Bend	1882.	
Neal, W. A	Elkhart	1882.	
Sensenich, A. S	Wakarusa	1883.	
Short, S. B	Elkhart	1882.	Withdrawn.
Wagner, L. A	South Bend	1886.	
Work, J. A	Elkhart	1882.	

This Society meets on the second Tuesday in June, October, December, February and April.

FAYETTE COUNTY.

Officers.

Geo. R. Chitwood, Pres.
S. D. Shepard, Vice Pres.
L. D. Dillman, Sec.
Joshua Chitwood, Treas.

Censors.

Chas. Wyman.
John E. Chitwood.
Wm. J. Pepper.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Chitwood, Geo. R	Connersville	1879.	
Chitwood, Joshua	Connersville	1879.	
Chitwood, John E	Connersville	1879.	
Chitwood, F. A	Connersville	1884.	Suspended.
Dillman, L. D	Connersville	1882.	
Gregg, V. H.	Connersville	1879.	
Hamilton, S. N	Connersville	1879.	
Pepper, William J	Connersville	1879.	
Phares, O. P	Alquina	1884.	Suspended.
Shepard, S. D	Everton	1884.	
Sipe, R. W	Orange	1882.	
Wyman, Charles	Lyons Station	1880.	

This Society meets on the first Tuesday of each month.

FLOYD COUNTY.

Officers.

R. S. Rutherford, Pres.
I. H. Cannon, Vice Pres.
W. L. Starr, Sec. and Treas.

Censors.

W. A. Clapp.
E. P. Easley.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Alexander, S. J	New Albany	1878.	
Bowman, Chas	New Albany	1878.	
Burney, W. A	New Albany	1880.	
Cannon, G. H	New Albany	1878.	
Clapp, W. A	New Albany	1878.	
Cook, C. P	New Albany	1883.	
Davis, J. M	Greenville	1880.	
Easley, E. P	New Albany	1878.	
Knoefel, R. C	New Albany	1883.	
McIntyre, C. W	New Albany	1882.	
Neat, A	New Albany	1878.	
Neat, T. C	New Albany	1881.	
Rutherford, R. S	Galena	1881.	
Scribner, E. B	New Albany	1885.	
Sloan, John	New Albany	1878.	
Stewart, J. L	New Albany	1878.	
Starr, W. L	New Albany	1881.	
Taggart, W. J	Galena	1881.	Suspended.

This Society meets on the first Thursday in each month, at 10 o'clock A. M.

FOUNTAIN COUNTY.

Officers.	*Censors.*
W. C. Cole, Pres.	Archie M. Rupert
Geo. S. Jones, Sec.	Geo. C. Hays.
Jno. W. Mock, Treas.	Scott McNeil.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Austin, Charles B	Veedersburgh	1882.	
Birch, Edward L	Covington	1886.	
Cole, William C	Attica	1867.	
Davidson, Jessie F	Wallace	1880.	
Fine, Ephraim M	Steam Corners	1869.	
Finney, Chas. J	Attica	1886.	
Goodin, Goldsmith	Veedersburgh	1881.	Suspended.
Hays, Geo. C	Hillsboro	1867.	
Johnson, Charles S	Harveysburgh	1876.	Deceased.
Jones, Geo. S	Covington	1867.	
Lyons, Lewis D	Attica	1867.	
McNeil, Scott	Stone Bluff	1876.	
Mock, John W	Covington	1878.	
Moore, Patrick B	Harveysburgh	1882.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Rowland, George	Covington	1867.	
Rupert, Archie M	Attica	1878.	
Spining, John N	Covington	1878.	
Stout, William R	Hillsboro	1882.	
Watson, Charles D	Covington	1867.	Removed.

This Society meets on the first Thursday in April and October, and at such other times as may be designated by the Society, or by call of the President.

FRANKLIN COUNTY.

Officers.

G. B. Buckingham, Pres.
M. L. Cupp, Vice Pres.
R. J. Owens, Sec.
H. G. Averdick, Treas.

Censors.

E. L. Patterson.
Thos. Gifford.
E. B. Mann.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Averdick, H. G	Oldenburgh	1880.	
Buckingham, G. B	Brookville	1880.	
Berry, George	Brookville	1880.	
Colscott, T. A	Brookville	1882.	Honorary.
Conner, Thomas H	Matamora	1881.	
Cupp, M. L	Matamora	1883.	Suspended.
Gifford, Thomas, Sr	Laurel	1880.	Deceased.
Gifford, Thomas, Jr	Laurel	1880.	
Hendricks, T. L	Fairfield	1881.	
Mann, E. B	Oldenburg	1884.	
McCarty, T. J	Brookville	1882.	Removed.
Morgan, J. O	Springfield		
Owens, R. J	Cedar Grove	1882.	
Patterson, E. L	Laurel	1880.	
Schum, Charles	St. Peters	1880.	

This Society meets on the first Tuesday in each month.

GIBSON COUNTY.

Officers.

G. C. Fisher, Pres.
S. H. Shoptaugh, Vice Pres.
A. R. Burton, Sec.
G. C. Kendle, Treas.

Censors.

F. H. Maxam.
J. F. Gudgel.
J. C. Patten.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Blair, F.	Princeton	1886.	
Blair, W. W.	Princeton	1874.	
Burton, A. R	Princeton	1882.	
Fisher, G. C.	Patoka	1884.	
Genung, W. R.	Fort Branch	1882.	
Gudgel, J. F	Hazleton	1877.	Suspended.
Kendle, G. C	Princeton	1882.	
Kidd, W. G.	Princeton	1874.	
Malone, J. A	Princeton	1874.	
Mason, G. C.	Oakland City	1880.	
Maxam, F. H.	Princeton	1877.	
Munford, S. E.	Princeton	1874.	
Ottman, P.	Haubstadt	1881.	
Patten, J. C	Francisco	1874.	
Sears, G. M.	Patoka	1880.	Deceased.
Shoptaugh, S. H	Princeton	1874.	
Thomas, G. A	Haubstadt	1882.	Removed.
Ward, J. P.	Princeton	1884.	Removed.
West, V. T	Princeton	1874.	

This Society meets on the last Friday in each month.

GRANT COUNTY.

Officers.	*Censors.*
Marshall T. Shively, Pres.	Geo. W. Daniels.
Samuel C. Weddington, Sec.	Thos. C. Kimball.
Lewis Williams, Treas.	Samuel Hollis.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Ardery, Oscar	New Cumberland	1884.	
Ayres, Stephen D	Marion	1850.	
Barnes, W. C.	Mier	1875.	
Conwell, L. V.	Van Buren	1883.	
Corey, Lavanner	Van Buren	1862.	
Corey, Lewis J.	Van Buren	1875.	
Daniels, G. W.	Marion	1877.	
Egbert, George	Marion	1857.	Honorary.
Flinn, William	Marion	1876.	
Haines, Nathaniel P.	Roseburg	1884.	
Hall, John W.	Portland	1882.	Removed.
Hamilton, A. A	Marion	1872.	
Hanmore, John	Jalapa	1884.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Henley, Alpheus	Fairmount	1866.	
Hess, Luther P	Marion	1866.	
Hollis, Samuel	Upland	1881.	
Horne, Samuel S.	Jonesboro	1869.	
Hubbard, William H	Fairmount	1884.	
Jackson, L. M.	Jonesboro	1883.	
Kimball, A. D.	Xenia	1857.	Honorary.
Kimball, T. C.	Marion	1868.	
Knight, John C	Jonesboro	1882.	
Litzenberger, O	Xenia	1882.	Honorary.
Lenox, Frank	Swazey	1879.	
Lomax, William	Marion	1848.	
Lord, J. Levi	Point Isabel	1882.	
Meek, John A	Jonesboro	1850.	
Moore, Charles V	Fairmount	1878.	
McKinney, G. M.	Jonesboro	1879.	
Reasoner, Harmon D.	Marion	1866.	
Seal, I. N.	Hackleman	1878.	
Shively, James S.	Marion	1848.	
Shively, Marshall T.	Marion	1874.	
Smith, R. W	Xenia	1875.	Honorary.
Stout, O. L.	Upland	1883.	
Weddington, S. C.	Jonesboro	1871.	Deceased.
Wharton, W. L.	New Cumberland	1882.	
Whitson, Eli M	Jonesboro	1883.	
Williams, Lewis	Marion	1857.	
Williamson, P. E.	Sweetser	1883.	

This Society meets on the fourth Tuesday of each month, except August and September.

HAMILTON COUNTY.

Officers.

P. P. Whitesell, Pres.
J. M. Gray, Vice Pres.
W. B. Graham, Sec.
A. D. Booth, Treas.

Censors.

F. M. Warford.
E. C. Loehr.
J. M. Gray.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Benson, J. L.	Westfield	1873.	
Booth, A. D.	Noblesville	1874.	
Dove, S. C.	Westfield	1872.	
Graham, W. B.	Noblesville	1873.	
Gray, Jno. M	Noblesville	1872.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Haworth, M. C	Noblesville	1873.	
Herr, H. S.	Westfield	1885.	
Johnson, H. V. V	McMinnville, Ore.	1883.	Honorary.
Loehr, E. C	Noblesville	1873.	
McShane, J. T.	Carmel	1874.	
Parr, J. N.	Jollietville	1874.	
Stout, H. H	Cicero	1873.	
Tucker, A. R	Cicero	1873.	
Whitesell, P. P	Clarksville	1873.	

HANCOCK COUNTY.

Officers.	*Censors.*
Wm. M. Pearson, Pres.	J. M. Ely.
M. L. Bruner, Vice Pres.	E. I. Judkins.
Warren R. King, Sec. and Treas.	S. T. Yancy.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bell, W. S.	Greenfield	1882.	Suspended.
Bruner, M. L	Westland	1885.	
Bruner, C. K	Westland	1886.	
Ely, J. M.	Sugar Creek P. O.	1874.	
Ely, L. C.	Sugar Creek P. O.	1884.	
Hervey, F. F	Fortville	1881.	
Hess, M. M	Cleveland	1883.	Removed.
Howard, N. P., Sr	Greenfield	1874.	V. P. State Soc. '77.
Howard, N. P. Jr	Greenfield	1879.	
Judkins, E. I	Greenfield	1874.	
King, Warren R	Philadelphia	1877.	
Martin, S. M	Greenfield	1874.	
Pearson, Wm	Fountaintown, Shelby Co.	1874.	No Society in Shelby Co.
Ryan, W. B	Willow Branch	1881.	
Troy, S. A.	Milner's Corner	1874.	
Yancy, S. F	Fortville	1874.	

This Society meets on the first Tuesday in each month.

HENDRICKS COUNTY.

Officers.	*Censors.*
G. H. F. House, Pres.	C. A. White.
T. Hunt, Vice Pres.	T. F. Dryden.
C. E. Farabee, Sec. and Treas.	W. T. Lawson.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Barker, Joel	Brownsburg	1876.	
Bartholomew, B	Danville	1876.	
Brill, J. H	Pittsboro	1876.	
Carter, Amos	Plainfield	1883.	Suspended.
Davidson, A	Brownsburg	1880.	
Dryden, T. F	Clayton	1876.	
Farabee, C. E	Danville	1880.	
Green, J. N	Stilesville	1876.	
Heavenridge, A	Stilesville	1876.	
Hoadley, W. J	Danville	1876.	
House, G. H. F	Clayton	1880.	
Hunt, T	Coatsville	1886.	
Kennedy, L. H	Danville	1876.	
Lawson, W. T	Danville	1879.	
Parker, M. G	Danville	1877.	
Ragan, J. S	Avon	1879.	
Strong, J. T	Plainfield	1883.	Suspended.
Smith, F. W	Plainfield	1876.	
White, C. A	Danville	1883.	

This Society meets on the third Tuesday in April, July, October and January.

HENRY COUNTY.

Officers.

O. E. Holloway, Pres.
E. S. Ferris, Vice Pres.
John Rea, Sec. and Treas.

Censors.

W. A. Boor.
O. J. Gronendyke.
G. W. Burke.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Anderson, John T	Honey Creek	1881.	
Bailey, G. D	Spiceland	1879.	
Bailey, Rachel S	Spiceland	1880.	
Barrett, E. H	Knightstown	1885.	
Benedict, H	Springport	1879.	
Boor, W. A	Newcastle	1879.	
Boor, W. F.	Newcastle	1879.	
Burke, G. W	Newcastle	1879.	
Cochrane, James	Spiceland	1879.	
Crouse, Henry M	Knightstown.	1882.	
Ferris, E. S	Newcastle	1885.	
Ferris, Samuel	Newcastle	1879.	
Gronendyke, O. J	Greensborough	1885.	
Gronendyke, T. W	Newcastle	1879.	
Hess, F. T	Cadiz	1882.	
Hobbs, Wilson	Knightstown.	1879.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Holloway, O. E.	Knightstown.	1885.	
Jackson, F. G.	Mt. Summit	1883.	Suspended.
Pickering, Samuel.	New Lisbon	1882.	
Rea, Charles L.	Rogersville	1884.	
Rea, John	Newcastle	1879.	
Resoner, Wm. M.	Sulphur Springs	1879.	

This Society meets on the second Thursday in April, June, August, October, December and February.

HOWARD COUNTY.

Officers.

G. B. Scott, Pres.
J. H. Berst, Vice Pres.
J. W. Wright, Sec.
J. O. Garr, Trees.

Censors.

J. A. Lovett,
R. Q. Wilson,
Lewis Kern.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Armstrong, E. A.	Kokomo	1864.	
Berst, J. H.	Kokomo	1883.	Suspended.
Bates, A. J.	Kokomo	1883.	
Conner, Levi	Jerome	1880.	
Covalt, A. A.	Greentown.		Suspended.
Garr, J. O.	Kokomo	1884.	
Hull, W. H.	Center	1884.	Suspended.
Johnson, I. C.	Kokomo	1854.	
Kern, Lewis	Kokomo	1858.	
Kern, Theo.	Kokomo	1877.	
Lovett, J. A.	Kokomo	1883.	
Moulder, Thos. M.	Russiaville	1880.	
Moulder, J. McLean.	Kokomo	1875.	
Martin, I. W.	Ervin.	1865.	
Martin, John H. L.	Arcadia	1880.	Deceased.
Miller, Henry C.	Ervin	1886.	
Miller, L. C.	Alto	1867.	
Moore, J. B.	Kokomo	1878.	
Payton, W. B.	Greentown.	1882.	Suspended.
Richmond, C.	Kokomo	1854.	Honorary.
Scott, Wm	Kokomo	1864.	
Scott, Jas. T.	Greentown.	1864.	
Scott, G. B.	Greentown.	1868.	
Shirley, D. J	New London.	1864.	
Smith, R. H.	Kokomo	1880.	
Thorn, J. C.	Kokomo	1884.	
Wilson, R. Q.	Kokomo	1866.	
Wright, J. W.	Kokomo	1885.	

This Society meets June 10.

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HUNTINGTON COUNTY.

Officers.

G. D. Trembley, Pres.
W. C. Chafee, Sec.
C. E. Grayston, Treas.

Censors.

Chas. Good.
Ervin Wright.
Samuel Hupp.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Brandon, W. S	Plum Tree	1883.	
Boswell, A. J	Andrews	1883.	
Bucher, J. C	Andrews	1883.	Suspended.
Carson, W. F	Roanoke	1883.	
Chafee, W. C	Huntington	1883.	
Eversole, Charles	Pleasant Plain	1883.	
Fisher, ——	Brown's Corners	1885.	
Gimmel, H. C	Markel	1883.	
Good, Charles H	Warren	1883.	
Grayston, B. H. C	Huntington	1883.	
Grayston, Charles E	Huntington	1883.	
Grayston, F. S C	Huntington	1883.	
Gregg, Henry	Roanoke	1886.	
Hupp, Samuel	Warren	1883.	
Kilander, W. J	Markel	1883.	
Leyman, Emery H	Huntington	1883.	
Mitchell, S. P	Mt. Ætna	1883.	Suspended.
Palmer, E. M	Warren	1883.	
Scott, N. W	Mt. Ætna	1883.	
Severance, LaGrange	Huntington	1884.	
Shaffer, Abner H	Huntington	1883.	
Sprowl, John S	Warren	1883.	
Trembly, G. D	Bippus	1883.	
Williams, O. B	Andrews	1883.	
Wright, Ervin	Roanoke	1883.	

This Society meets on the second Tuesday in each month.

JACKSON COUNTY.

Officers.

W. M. Rodman, Pres.
S. H. Charlton, First Vice Pres.
W. E. Whitehead, Second Vice Pres.
N. N. Shipman, Sec. and Treas.

Censors.

Jos. A. Stilwell.
T. S. Galbraith.
W. E. Whitehead.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Anthony, J. R	Tampico	1883.	
Bain, Wm. C. A	Brownstown	1876.	Removed.

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Barnes, G. O	Courtland	1877.	
Boaz, M. L	Brownstown	1877.	Removed.
Charlton, Samuel H	Seymour	1876.	
Coryell, Samuel	Crothersville	1879.	
Cummings, D. J	Houston	1876.	
Cummings, H. A	Houston	1884.	
Curtis, Wm. H	Seymour	1886.	
Galbraith, Thos. S	Seymour	1876.	
Gerrish, Willard F	Seymour	1885.	
May, G. W	Mooney	1876.	Removed.
Orvis, G. Q	Seymour	1885.	
Osterman, A. G	Dudleytown	1882.	
Rains, G. W	Courtland	1881.	
Reed, E. P	Ewing	1876.	
Rodman, Wm. M	Brownstown	1878.	
Ruddick, L	Reddington	1882.	
Shields, James M	Seymour	1884.	
Shields, John T	Seymour	1877.	
Shipman, N. N	Seymour	1880.	
Stilwell, Joseph A	Brownstown	1876.	
Tinch, E. T	Ewing	1876.	Suspended.
Whitehead, W. E	Brownstown	1879.	
Wilson, Marshall V	Medora	1876.	Suspended.
Woods, R. A	Seymour	1884.	Removed.

This Society meets on the first Thursday in March, June, October and December.

JAY COUNTY.

Officers.	*Censors.*
C. S. Arthur, Pres.	D. S. Stanton.
J. G. Sims, Sec.	O. E. Abel.
Samuel Mason, Treas.	P. Dickes.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Abel, O. E	Bryant	1885.	
Arthur, Christopher S	Portland	1881.	
Bosworth, Jacob M	Pennville	1883.	
Brown, H. V	Portland	1886.	
Clevenger, Benjamin J	Redkey	1881.	Suspended.
Conner, F. C	Redkey	1881.	Suspended.
Dickes, Philip	Boundary	1881.	
Dickes, Jno. T	Boundary	1885.	
Fertich, G. W	Dunkirk	1883.	
Hall, John W	Portland	1885.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Kinsey, David S.	Portland	1881.	
Kidder, James F	New Mt.Pleasant	1882.	
Mason, Samuel	Pennville	1883.	
Mackey, Charles W	Portland	1884.	
Shepherd, Geo. W	Redkey	1881.	
Shepherd, Thos. S	Portland	1883.	
Sims, J. G	Portland	1885.	
Stanton, David S	Portland	1881.	Suspended.

This Society meets on the second Friday of each alternate month, beginning with April.

JENNINGS COUNTY.

Officers.

Nelson D. Gaddy, Pres.
James H. Green, Vice Pres.
Walter J. Mitchell, Sec. and Treas.

Censors.

Orville Gaddy.
James H. Green.
J. Frank Mitchell.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Cope, James P	Butlerville	1883.	Removed.
Gaddy, Nelson D	Lovett	1883.	
Gaddy, Orville	Paris Crossing	1884.	
Green, Charles H	North Vernon	1883.	
Green, James H	North Vernon	1884.	
Hicks, P. R	Nebraska	1886.	
Lyle, John M	Cana	1884.	
McGinty, John	North Vernon	1886.	
Mitchell, J. F	Vernon	1883.	
Mitchell, Walter J	Vernon	1884.	
Richardson, Nehemiah	Vernon	1883.	
Richardson, Will H	Vernon	1883.	
Spencer Jonathan A	San Jacinto	1883.	
Stern, Will H	Vernon	1886.	
Wildman, Wm A	San Jacinto	1886.	

Regular meetings of Jennings County Medical Society are second Saturday in April, first Saturday in September, and Anniversary, November 22.

JEFFERSON COUNTY.

Officers.

James R. Lewis, Pres.
J. H. Matthews, Sec. and Treas.

Censors.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Cornett, W. T. S	Madison	1874.	Pres. State Soc. 1849.
Forshee, Thomas W	Madison	1882.	
Lewis, James R	Madison	1874.	
Lewis, George W	Kent	1883.	
Matthews, J. H	Madison	1874.	
McCoy, Wm. A	Madison	1882.	
Wright, C. H	North Madison	1874.	

KNOX COUNTY.

Officers.

G. L. Dorsey, Pres.
F. W. Beard, Sec.
J. H. Hensley, Treas.

Censors.

G. L. Dorsey.
B. F. Keith.
W. B. Harris.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Anderson, Wm. B	Edwardsport	1879.	Suspended.
Beard, F. W	Vincennes	1875.	
Beard, Schuyler C	Vincennes	1885.	
Bever, John C	Vincennes	1875.	
Busse, Edward P	Vincennes	1885.	
Bedell, W. B	Vincennes	1885.	Suspended.
Davis, Royse	Deckers	1878.	
Dorsey, G. L	Bicknell	1885.	
Fairhurst, O	Vincennes	1875.	Suspended.
Folks, C. A	Vincennes	1885.	Suspended.
Grigsby, W. B	Oaktown	1882.	
Harris, Wm. B	Vincennes	1875.	
Harris, F. M	Vincennes	1879.	Suspended.
Harrison, S. L	Vincennes	1876.	
Hensley, J. H	Vincennes	1881.	
Haughter, A. J	Oaktown	1875.	Suspended.
Kieth, B. F	Edwardsport	1875.	
Martin, W. T	Lovely Dale	1875.	Removed.
Milam, Jno. W	Bruceville	1881.	
Owings, T. B	Oaktown	1882.	
Pugh, J. W	Oaktown	1885.	Suspended.
Randolph, A. J	Vincennes	1880.	
Smith, H. M	Vincennes	1875.	Suspended.
Staley, L. B	Bicknell	1885.	

This Society meets on the first Tuesday in April, July, October and January.

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KOSCIUSKO COUNTY.

Officers.

I. B. Webber, Pres.
C. R. Long, Vice Pres.
T. J. Shackleford, Sec.
J. H. Davisson, Treas.

Censors.

F. Moro.
J. B. Hazel.
F. M. Pearman.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bacon L. B.	Warsaw	1885.	
Bash, Joseph M	Warsaw	1878.	
Becknell, Irvin J	Milford	1878.	
Brown, George W	Claypool	1883.	
Burket, Benjamin	Warsaw	1879.	
Burket, Calvin W	Warsaw	1875.	
Cammack, Thomas	Milford	1876.	Suspended.
Davisson, J. H.	Warsaw	1876.	
Hazel, John B.	Claypool	1881.	
King, H. O	Pierceton	1881.	
Long, Charles R.	Pierceton	1881.	
Moody, Theodore F	Pierceton	1882.	
Moro, Frances	Warsaw	1883.	
Pearman, Frances M.	Palestine	1878.	
Shackleford, T. J	Warsaw	1881.	
Swygart, H. M.	Atwood	1884.	
Terry, D. E.	Silver Lake	1881.	Suspended.
Webber, Irvin B	Warsaw	1875.	

The Society meets on the second Thursday of each month.

LAGRANGE COUNTY.

Officers.

Wm. H. Short, Pres.
S. A. Work, First Vice Pres.
D. W. Dryer, Second Vice Pres.
John L. Short, Sec.
H. M. Casebeer, Treas.

Censors.

E. G. White.
John Dancer.
W. T. McCoy.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Broughton, F. H.	Walcottville	1884.	Removed.
Casebeer, H. M	Lagrange	1878.	
Dancer, John	South Milford	1877.	
Dayton, George H.	Lima	1877.	
Dryer, D. W.	Lagrange	1885.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Goodrich, C. D	Lima	1880.	
Hughes, William	Lima	1877.	
McCoy, W. T	Lagrange	1885.	
Niman, Jonas P	Lagrange	1877.	
Niman, Charles H	Lagrange	1881.	
Short, William H	Lagrange	1877.	
Short, John L	Lagrange	1877.	
Shrock, H. W	Lake Shore	1880.	
Spaulding, A. M	Brushy Prairie	1877.	
White, E. G	Lagrange	1877.	
Work, Samuel A	Wolcottville	1883.	

Our Society meets on the last Wednesday of January, April, July and October.

LAWRENCE COUNTY.

Officers.

Samuel A. Rariden, Pres.
Wm. A. Smith, Vice Pres.
Harvey Voyles, Sec.
J. B. Larkin, Treas.

Censors.

Chas. E. Rariden.
A. J. McDonald.
S. W. Smith.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Allen, Edward F	Fayettesville	1871.	
Bare, Addison W	Bryantsville	1862.	Honorary.
Bulkley, L. D	Danville, Ill	1882.	Honorary.
Burton, George C	Mitchell	1882.	Honorary.
Burton, John	Georgia	1853.	
Burton, George W	Mitchell	1862.	
Burton, W. A	Mitchell	1862.	
Butler, W. C	Huron	1882.	
Biggs, J. T	Mitchell	1853.	Honorary.
Berry, A. F	Springville	1875.	
Bullitt, T. W	Rivervale	1883.	
Crim, L. A	Bedford	1876.	Honorary.
Dixon, H. C	Tunnelton	1876.	
Ellison, W. T	Heltonville	1879.	
Fanbion, James	Heltonville	1885.	
Faucett, J. H	Fayetteville	1883.	Honorary.
Gardner, Joseph	Bedford	1875.	Honorary.
Gibson, E. P	Hoosier Prairie, Ill.,	1875.	Honorary.
Gibson, John B	Georgia	1885.	Removed.
Hon, B. J	Orleans	1881.	Honorary.
Hornocker, S. D	Silverville	1886.	
Howard, S. B	Tunnelton	1882.	Removed.

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NAMES.	RESIDENCE.	ADMITTTD.	REMARKS.
Hunter, F. S.	Ft. Ritner.	1882.	Honorary.
Judah, Winepark	Guthrie.	1877.	Removed.
Kelly, John C.	Mitchell	1882.	Honorary.
Kimberlin, H. L.	Mitchell	1862.	Honorary.
Laughlin, E. D.	Orleans	1881.	V. P. State Soc. '76.
Larkin, J. B.	Mitchell	1862.	
Laforce, H. C.	Bedford	1876.	Honorary.
Mayfield, R. N.	Springville	1881.	Honorary.
McDonald, A. J.	Mitchell	1882.	
McIntire, E. S.	Mitchell	1866.	
Newland, Ben	Bedford	1853.	Pres. State Soc. '76, V. P. '58-'63.
Phipps, J. M.	Heltonville	1876.	
Pearson, J. C	Mitchell	1875.	
Rariden, Samuel A.	Bedford	1853.	
Rariden, Chas. E	Bedford	1881.	
Smith, Wm. H	Leesville	1853.	
Smith, Spencer W.	Leesville	1882.	
Stillson, Joseph	Bedford	1853.	Deceased.
Stillson, Hamilton	Bedford	1882.	Removed.
Voyles, Harvey	Fayetteville	1884.	
Woodward, W. W	Springville	1885.	
Yost, J. L. W.	Mitchell	1875.	
Yandell, William	Huron	1875.	

This Society meets on the first Thursday of June, September, December and March.

MADISON COUNTY.

Officers.

J. W. Hunt, Pres.
I. N. Vanmetre, Vice Pres.
C. E. Diven, Sec.
W. A. Hunt, Treas.

Censors

John W. Cook.
W. M. Garretson.
J. Saunders.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Alexander, L. E.	Pendleton	1880.	
Brandon, J. F.	Anderson	1884.	
Broadbent, Oliver	Anderson	1875.	
Carter, D. M	Anderson	1882.	Removed.
Chittenden, G. F.	Anderson	1875.	
Cook, Ward	Pendleton	1875.	
Cook, John W.	Pendleton	1877.	
Diven, C. E	Anderson	1880.	
Edwins, S. W	Frankton	1878.	
French, W. J	Frankton	1885.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Fussell, Lundy	Markleville.	1877.	
Garretson, Wm. M	Perkinsville	1882.	
Harter, J. H	Anderson	1879.	
Harter, Wm. P	Anderson	1879.	
Hunt, Wm. A	Anderson	1875.	
Hunt, J. W	Alexandria	1879.	
Jones, Horace E	Anderson	1875.	
Perry, A. J	Alexandria	1884.	
Perry, J. W	Alexandria	1875.	
Saunders, Joseph	Anderson	1881.	
Spann, B. F	Anderson	1875.	
Stephenson, Joseph	Pendleton	1880.	Deceased.
Stewart, Jonas	Anderson	1875.	
Suman, William	Anderson	1875.	
Swallow, George E	Summitville	1880.	
Vanmetre, I. N	Florida	1879.	
Wickersham, N. L	Anderson	1875.	

The Society meets on first Wednesday in January, April, July and October.

MARION COUNTY.

Officers.

A. W. Brayton, Pres.
E. Hadley, Vice Pres.
F. M. Ferree, Sec.
J. O. Stillson, Ass't Sec.
L. M. Rowe, Treas.

Censors.

L. L. Todd.
G. V. Woolen.
Geo. J. Cook.
W. E. Jeffries.
F. C. Ferguson.
R. E. Haughton.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Allen, Wesley	West Newton	1878.	
Barnes, C. A	Brightwood	1878.	
Bell, Guido	Indianapolis	1883.	
Bigelow, J. K	Indianapolis	1876.	Vice Pres. State Soc.'73. Deceased.
Brayton, A. W	Indianapolis	1881.	
Brennan, E. J	Indianapolis	1885.	
Brown, J. R	Insane Hospital	1883.	
Browning, W. J	Insane Hospital	1886.	
Bryan, D. C	Indianapolis	1885.	
Bryan, T. N	Indianapolis	1875.	
Carson, L. O	Traders' Point	1879.	
Chambers, John	Indianapolis	1875.	
Chatard, Rt. Rev. Bishop	Indianapolis	1880.	Honorary.
Combs, Geo. W	Indianapolis	1884.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Comingor, J. A	Indianapolis	1875.	
Cook, G. J	Indianapolis	1882.	
Crist, D. O	Indianapolis	1879.	
Daniels, E. A	Indianapolis	1885.	
Davis, Samuel	Indianapolis	1879.	Deceased.
Dunlap, J. M	Indianapolis	1883.	
Earp, S. E	Indianapolis	1882.	
Eastman, Joseph	Indianapolis	1875.	
Edenharter, Geo. F	Indianapolis	1885.	
Elder, E. S	Indianapolis	1876.	Sec. State Med. Soc.
Featherston, J. R	Indianapolis	1875.	Deceased.
Ferguson, F. C	Indianapolis	1882.	
Ferree, F. M	Indianapolis	1882.	
Field, M. H	Indianapolis	1875.	
Fletcher, C. I	Indianapolis	1881.	
Fletcher, W. B	Insane Hospital	1875.	
French, Mrs. Mattie	Indianapolis	1885.	
Garver, J. J	Indianapolis	1881.	
Gaston, J. M	Indianapolis	1884.	Honorary.
Hadley, E	Indianapolis	1875.	
Harvey, T. B	Indianapolis	1875.	Vice Pres. State Soc. '65; Pres. '80.
Haslep, Marie	Indianapolis	1884.	
Haughton, R. E	Indianapolis	1876.	Pres. State Soc. '74; Vice Pres. '72.
Haymond, W. S	Indianapolis	1880.	Deceased.
Hays, W. F	Indianapolis	1881.	
Heinrichs, W. F	Indianapolis	1885.	
Henthorne, L. S	Indianapolis	1878.	
Hervey, J. W	Indianapolis	1875.	
Hodges, E. F	Indianapolis	1880.	
Hunt, P. G. C	Indianapolis	1882.	Honorary.
Hurty, J. N	Indianapolis	1882.	Honorary.
Jameson, H	Indianapolis	1875.	
Jameson, P. H	Indianapolis	1875.	
Jeffries, W. E	Indianapolis	1875.	
Keegan, John	Indianapolis	1885.	Removed.
Kitchen, John M	Indianapolis	1878.	
Lewis, E. R	Crawfordsville	1884.	
Long, J. B	Indianapolis	1884.	
Marsee, J. W	Indianapolis	1878.	
Martin, Herman H	Indianapolis	1886.	
Maxwell, Allison	Indianapolis	1878.	
Metcalf, C. N	Indianapolis	1885.	
McMurray, Allen S	Indianapolis	1886.	
Morgan, W. B	Indianapolis	1883.	
Morrison, F. A	Indianapolis	1881.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Morrow, J. E	Indianapolis	1883.	Suspended.
Newcomer, F. S	Indianapolis	1875.	
Oliver, D. H	Indianapolis	1875.	
Oliver, J. H	Indianapolis	1881.	
Partlow, J. W	Indianapolis	1882.	
Patterson, A. W	Indianapolis	1878.	
Pearson, C. D	Indianapolis	1882.	
Pettijohn, O. B	Indianapolis	1882.	
Pfaff, O. G	Indianapolis	1884.	
Porter, C. N	Indianapolis	1882.	Withdrawn.
Reyer, E. C	Insane Hospital	1886.	
Roesgen, John P	Indianapolis	1885.	Removed.
Rooker, J. I	Castleton	1880.	
Rooker, C. N	Indianapolis	1884.	
Rowe, L. M	Indianapolis	1882.	
Sims, J. F	Indianapolis	1886.	
Sloan, G. W	Indianapolis	1882.	Honorary.
Spicer, J. W	Acton	1883.	
Stratford, I. W	Indianapolis	1885.	Deceased.
Stevens, Thad. M	Indianapolis	1875.	Deceased.
Stillson, J. O	Indianapolis	1884.	
Stockton, Sarah	Insane Hospital	1884.	
Stone, R. F	Indianapolis	1881.	
Sutcliffe, J. A	Indianapolis	1878.	
Taylor, J. H	Indianapolis	1880.	
Thomas, A. J	Insane Hospital	1880.	
Thomas, W. H	Indianapolis	1885.	
Thompson, D. A	Indianapolis	1883.	
Thompson, J. L	Indianapolis	1876.	
Thompson, W. C	Indianapolis	1876.	
Todd, L. L	Indianapolis	1875.	
VanVorhis, F. J	Indianapolis	1875.	Vice Pres. State Soc. '81.
Vernon, Geo. W	Indianapolis	1886.	
Wagner, Theo. A	Indianapolis	1884.	
Walker, I. C	Indianapolis	1875.	
Walling, W	Indianapolis	1875.	
Wands, William	Indianapolis	1875.	
Waterman, L. D	Indianapolis	1875.	Pres. State Soc. '77.
Wishard, G. W	Indianapolis	1882.	Withdrawn.
Wishard, W. H	Indianapolis	1875.	
Wishard, W. N	Indianapolis	1875.	
Woodburn, J. H	Indianapolis	1875.	V. P. State Soc. '66; Pres. '84.
Woolen, G. V	Indianapolis	1875.	
Wright, C. E	Indianapolis	1878.	

This Society meets every Tuesday at 8 o'clock P. M. in the Council Chamber, at the Court House.

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MARSHALL COUNTY.

Officers.

A. B. Younkman, Pres.
J. W. Eidson, Vice Pres.
J. H. Wilson, Sec. and Treas.

Censors.

A. C. Holtzendorff.
S. W. Gould.
T. T. Linn.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Borton, T. A.	Plymouth	1881.	
Eidson, J. W.	Bourbon	1884.	
Gould, S. W.	Argos	1878.	
Hamilton, J. J.	Linkville	1880.	
Holtzendorff, A. C.	Plymouth	1881.	
Leland, J. S	Argos	1878.	
Linn, T. T.	Bourbon	1881.	
Moore, Allen	Lapaz	1883.	
Palmer, D. B.	Lapaz	1885.	Removed.
Parks, B. W	Bourbon	1882.	
Rea, O. A.	Marmount	1880.	
Reynolds, G. R	Plymouth	1878.	
Stevens, O. P	Maxinkuckee	1878.	
Short, R. B.	Bourbon	1882.	Removed.
Sutton, J. A	Argos	1884.	
Wahl, George F	Bremen	1884.	
Wilson, J. H	Plymouth	1878.	
Wiseman, B. W. S	Marmount	1879.	Removed.
Younkman, A. B.	Bremen	1880.	

This Society meets on the second Thursday in July and October, 1886, and January and April, 1887.

MARTIN COUNTY.

Officers.

G. W. Walls, Pres.
S. H. Brittain, Vice Pres.
J. C. Trueblood, Sec. and Treas.

Censors.

H. W. Shirley.
Jas. K. Walker.
J. C. L. Campbell.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Brittain, S. H	Loogootee	1880.	
Campbell, J. C. L	Loogootee	1880.	
Oppelt, E. A.	Loogootee	1880.	
Plummer, I. Nut	Shoals	1881.	
Plummer, R. S.	Shoals	1880.	
Shirley, H. W	Shoals	1880.	
Trueblood, J. C	Loogootee	1880.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Walls, G. W.	Shoals	1880.	
Walker, James K	Loogootee	1880.	
Yenne, Charles H	Shoals	1884.	Removed.

This Society meets on the first Tuesday in January, April, July and October.

MIAMI COUNTY.

Officers.	*Censors.*
W. K. Armstrong, Pres.	A. F. Smith.
C. B. Higgins, Sec.	H. P. McDowell.
E. M. Bloomfield, Treas.	E. K. Friermood.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Armstrong, W. K	Mexico	1885.	
Ager, Upton A	Perrysburg	1885.	
Bloomfield, Edwin M.	Peru	1872.	
Brady, C. C.	Gilead	1885.	
Brenton, Wm. H.	Peru	1872.	
Cain, John C	Santa Fe	1880.	Suspended.
Friermood, E. K.	Amboy	1872.	
Friermood, S. M.	Santa Fe	1885.	Removed.
Graham, Bourbon R	Peru	1874.	
Helm, John H	Peru	1872.	Pres. State Soc. '75.
Higgins, Carter B	Peru	1872.	
Ijams, Thos. F	North Grove	1885.	Suspended.
Litzenberger, Otto P	Xenia	1885.	Suspended.
Meek, J. A	Bunker Hill	1872.	
Marsh, Simeon S,	Peru	1879.	
McDowell, Henry P	Bunker Hill	1885.	
Pence, Rollin	Peru	1879.	
Smith, A. F	Waupecong	1885.	
Wilson, W. T.	Bunker Hill	1872.	

This Society meets at call of the President.

MONROE COUNTY.

Officers.	*Censors.*
George W. Bryan, Pres.	Robert M. Weir.
Joseph G. McPheeters, Vice Pres.	Rice C. Harris.
James D. Maxwell, Jr., Sec.	James D. Maxwell, Sr.
John E. Harris, Treas.	

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bryan, George W	Bloomington	1876.	
Dodd, James	Clear Creek	1876.	
Gastin, J. H.	Stanford	1876.	
Harris, R. C.	Ellettsville	1876.	Suspended.
Harris, J. E.	Bloomington	1882.	
Maxwell, James D., Sr.	Bloomington	1876.	
Maxwell, James D., Jr.	Bloomington	1882.	
McPheeters, Joseph G	Bloomington	1876.	
Whitted, Wm. L.	Ellettsville	1876.	Suspended.
Weir, Robert M.	Bloomington	1882.	

MONTGOMERY COUNTY.

Officers.

J. W. Hunt, Pres.
S. W. Purviance, Vice Pres.
E. W. Keegan, Sec.
W. L. May, Ass't Sec. and Treas.

Censors.

A. P. Fitch.
O. H. Jones.
W. H. Ristine.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Beatty, ——	Newmarket	1884.	Suspended.
Detcheon, S. S.	New Richmond	1862.	
Dunlavy, J. E.	Waveland	1885.	Suspended.
Ensminger, J. A.	Whitlock	1885.	
Fitch, A. P.	Waynetown	1880.	
Freeman, J. W	Whitlock	1883.	Suspended.
Griffith, T. J	Darlington	1865.	
Griffitb, Mrs. E. H.	Darlington	1881.	
Hurt, W. J	Waynetown	1878.	
Hutchings, B. F.	Crawfordsville	1881.	
Jones, O. H.	Crawfordsville	1880.	
Keegan, E. W.	Crawfordsville	1862.	
Keeny, Henry	Linden	1870.	
Leech, T. F.	Waveland	1879.	Suspended.
May, W. L	Crawfordsville	1862.	
Purviance, S. W.	Crawfordsville	1870.	
Ristine, W. H.	Crawfordsville	1878.	
Straughn, J. W	Parkersburg	1862.	Suspended.
Washburne, E. P	Linden	1882.	

This Society met on the 27th of June, 1886.

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MORGAN COUNTY.

Officers.

S. A. Tilford, Pres.
W. E. Hendricks, Sec.
E. V. Green, Treas.

Censors.

C. M. Gravis.
A. W. Reagan.
H. W. Cure.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Cure, H. W	Martinsville	——	
Farr, U. H	Martinsville	——	
Green, E. V	Martinsville	1876.	
Gravis, C. M	Martinsville	——.	
Hendricks, W. E	Martinsville.	1879.	
Henson, Theodore	Martinsville	1880.	Suspended.
Houston, J. R	Martinsville	1886.	
Lindley, C. M	Brooklyn	1876.	Suspended.
Monical, Grant	Brooklyn	1881.	Suspended.
Reagan, A. W	Mooresville	1876.	
Robinson, H. C	Martinsville	1876.	
Seaton, Charles	Hall	——.	
Tilford, S. A	Martinsville	1886.	

NOBLE COUNTY.

Officers.

Norman Teal, Pres.
Salathiel T. Williams, Vice Pres.
John W. Hays, Sec. and Treas.

Censors.

J. L. Gilbert.
E. W. Knepper.
H. G. Tucker.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bowker, James J	LaOtto	1882.	
Broughton, Frank	Avilla	1885.	
Carr, Geo. W	Ligonier	1882.	
Depew, E. W	Wolf Lake	1882.	
Franks, Wm. H	Ligonier	1883.	
Gilbert, Joseph L	Kendallville	1882.	
Green, Wm. T	Albion	1884.	
Green, T. C	Albion	1886.	
Hays, John W	Albion	1883.	
Iddings, Homer L.,	Merrillville, Lake Co.	1882.	
Knepper, Edwin W	Ligonier	1882.	
Malony, Francis C	Avilla	1882.	
Mitchell, Wm. K	Ligonier	1886.	
Palmiter, C	Ligonier	1882.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Seymore, C. A	Wawaka	1886.	
Shobe, Wm. A	Ligonier	1882.	
Strawn, Enos K	Walcottville	1883.	
Trader, J. L	Brimfield	1882.	
Tucker, H. G	Cromwell	1882.	
Teal, Norman	Kendallville	1882.	
Teal, Geo. A	Kendallville	1882.	
Williams, Salathiel T	Kendallville	1883.	
Williams, W. S	Kendallville	1885.	

This Society meets on the first Tuesday after the first Monday in January, May and September.

OWEN COUNTY.

Officers.

John M. Stucky, Pres.
J. M. Goss, Vice Pres.
Allen Pierson, Sec.
W. V. Wiles, Treas.

Censors.

S. E. Smith.
F. M. Wiles.
N. D. Cox.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Coble, Jacob	Spencer	1885.	
Cox, N. D	Spencer	1879.	
Goss, J. M	Freedom	1879.	
Gray, O. F	White Hall	1883.	
Hickam, Wilford	Freedom	1884.	
Jones, J. M	Cataract	1880.	
Maddox, W. B. S	Vandalia	1879.	
McKelvey, S. R	Patricksburg	1884.	
Mullinix, M. G	Spencer	1879.	
Pierson, Allen	Spencer	1879.	
Ritter, C. L	Gosport	1883.	
Schell, Walker	Spencer	1879.	
Smith, J. W	Gosport	1879.	
Smith, S. E	Gosport	1884.	
Stucky, J. W	Gosport	1879.	
Stucky, F. V	Gosport	1884.	
Wiles, W. V.	Spencer	1879.	
Wiles, F. M	Spencer	1884.	

This Society meets on the third Wednesday of every other month.

PIKE COUNTY.

Officers.

T. W. Basinger, Pres.
J. M. Beardsley, Vice Pres.
C. H. Fullinwider, Sec.
A. R. Byers, Treas.

Censors.

J. R. Adams.
David H. Daniels.
J. T. Smith.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Adams, J. R.	Petersburg	1876.	
Agee, C. J.	Stendal	1876.	
Basinger, T. W	Oatsville	1883.	
Beardsley, J. M	Winslow	1883.	
Bethel, W. J	Petersburg	1871.	
Byers, A. R.	Petersburg	1876.	
Daniels, David H.	Otwell	1876.	
DeTar, David	Winslow	1878.	
Duncan, J. B	Petersburg	1879.	Expelled.
Fullinwider, C. H.	Petersburg	1885.	
Harris, R. W	Algiers	1880.	
Hornbrook, J. T	Union	1880.	
Kime, R. R.	Union	1881.	
Leslie, Alex., Sr.	Petersburg	1878.	Suspended.
Link, W. H.	Otwell	1884.	Suspended.
Schenck, H. F.	Oatsville	1876.	
Smith, J. T.	Glazen	1877.	

This Society meets on the first Thursday in each quarter. Annual meeting held in December.

PORTER COUNTY.

Officers.

J. H. Newland, Pres.
J. H. Letherman, Vice Pres.
W. A. Yohn, Sec.
D. D. Marr, Treas.

Censors.

J. C. Carson.
J. H. McCarthy.
G. W. Arnold.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Arnold, George W.	Hobart	1884.	
Carson, Joseph C.	Hebron	1883.	
Fisher, William H.	Wanatah	1883.	Suspended.
Gordon, P. P	Hobart	1884.	Suspended.
Letherman, Andrew P.	Valparaiso	1883.	
Loring, David J	Valparaiso	1883.	
Marr, Dolos D.	Chesterton	1883.	
McCarthy, James F	Valparaiso	1883.	
Miller, Hosia F. C.	Hobart	1884.	
Miller, E. R.	Chesterton	1883.	
Newland, James H.	Valparaiso	1883.	
Yohn, W. A.	Valparaiso	1884.	
Vanduzen, J. A	Kouts	1886.	

This Society meets on the second Thursday of March, June, September and December.

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POSEY COUNTY.

Officers.

O. F. Shultz, Pres.
C. Hicks, Vice Pres.
S. H. Pearse, Sec.
G. R. Peckenpaugh, Treas.

Censors.

C. Hicks.
William Holton.
John B. Weaver.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bitz, L. B	Blairsville	1877.	
Bucklin, G. W	New Harmony	1879.	
Elliott, Cyrineus	Poseyville	1878.	
Hensler, Ernst	West Franklin	1884.	
Hicks, C	Caborns	1877.	
Holton, W. M	New Harmony	1877.	
Kelley, F. H	Stewartsville	1877.	Removed.
Krawsgrill, D	Wadesville	1879.	
Montgomery, D. B	Cynthiana	1878.	Deceased.
Neal, Daniel	New Harmony	1878.	
Owen, Richard	New Harmony	1882.	Honorary.
Pearse, S. H	Mt. Vernon	1877.	
Peckenpaugh, G. R	Mt. Vernon	1884.	
Ramsey, D. C	Mt. Vernon	1881.	
Rawlings, S. O	New Harmony	1878.	
Rutledge, J. C	Poseyville	1878.	
Schultz, O. T	Mt. Vernon	1877.	
Spencer, E. V	Mt. Vernon	1877.	
Weever, John B	Mt. Vernon	1877.	
Welborn, G. W	Stewartsville	1877.	
Williams, J. B	Wadesville	1877.	
Young, T. B	Poseyville	1883.	

This Society meets on the third Tuesday in January, April, July and October.

PUTNAM COUNTY.

Officers.

Henry V. DeVore, Pres.
J. L. Preston, Vice Pres.
A. L. Preston, Sec.
G. C. Smythe, Treas.

Censors.

John Leatherman.
E. B. Evans.
L. M. Hanna.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Baker, P. S	Greencastle	1880.	
Batman, William F	Roachdale	1883.	
Bence, G. W	Greencastle	1879.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Cline, L. C	Bainbridge	1882.	Removed.
Cully, J. F	Bainbridge	1882.	
DeVore, H. V	Greencastle	1883.	
Evans, E. B	Greencastle	1877.	
Farris, E. G	Clinton Falls	1883.	
Farrow, A. C	Greencastle	1877.	Suspended.
Fisher, Samuel	Greencastle	1877.	
Fordice, J. L	Russellville	1879.	
Hanna, Levi M	Greencastle	1879.	
Harris, W. C	Carpentersville	1881.	
Hawkins, Eugene	Belle Union	1882.	
Larue, Benj	Portland Mills	1884.	
Leatherman, John	Manhattan	1885.	
McCarty, W. T	Bainbridge	1885.	Removed.
McNutt, G. F	Putnamville	1882.	Removed.
Milligan, Thomas F	Roachdale	1880.	
Preston, A. G	Greencastle	1877.	
Preston, Abe L	Greencastle	1885.	
Preston, J. L	Cloverdale	1877.	
Scott, Chas. E	Greencastle	1882.	Suspended.
Smythe, G. C	Greencastle	1877.	
Stockwell, Geo. W	Reelsville	1883.	
Walker, W. O	Bainbridge	1886.	
Zane, T. M	Reelsville	1878.	Removed.

This Society meets on the second Tuesday in January, April, July and October.

RANDOLPH COUNTY.

Officers.	*Censors.*
I. N. Trent, Pres.	J. S. Blair.
John Nixon, Vice Pres.	Jos. Meek.
L. N. Davis, Sec.	H. P. Franks.
John T. Chenoweth, Treas.	

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bennett, J. E	Hill Grove, Ohio	1877.	Honorary.
Berry, J. S	Spartanburg	1878.	
Beverly, J. E	Winchester	1876.	Honorary.
Blair, J. S	Lynn	1879.	
Chenoweth, John T	Winchester	1876.	
Chenoweth, N. T	Windsor	1876.	
Contie, J. L	Deerfield	1884.	
Davis, R. P	Portland, Jay Co.	1876.	Honorary.

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Davis, L. N	Farmland	1876.	
Evans, J. J	Winchester	1876.	
Farquhar, A. H	Ridgeville	1876.	
Franks, H. P	Losantville	1883.	
Harrison, H	Union City	1876.	Withdrawn.
Hunt, H. C	Trenton	1885.	
Hollinger, J. N	Henry county	1880.	Honorary.
Keener, James M	Farmland	1880.	
Markle, J. E	Winchester	1876.	Expelled.
Meek, Jos	Arba	1885.	Removed.
Nixon, John	Farmland	1882.	
Rogers, A. G	Parker	1880.	
Rynard, G	Union City	1885.	Suspended.
Smith, W. G	Winchester	1876.	
Trent, I. N	Losantville	1883.	

This Society meets the second Wednesday of January, April, July and October.

RIPLEY COUNTY.

Officers.

James Anderson, Pres.
Jeremiah Roberts, Vice Pres.
John G. Jones, Sec.
Edward D. Freeman, Treas.

Censors.

Chas. M. Brown.
E. D. Rodgers.
R. T. Olmstead.
Jos. Ziteke.
R. H. Miller.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Anderson, James	Versailles	1885.	
Brown, Chas. M	New Marion	1885.	
Brenton, J. T	Osgood	1886.	
Freeman, Edward D	Osgood	1886.	
Hess, John N	New Marion	1885.	
Hicks, John	Napoleon	1886.	
Holbert, Wm. M	Elrod	1886.	
Jones, John G	Versailles	1885.	
Miller, R. H	Cross Plains	1886.	
Olmstead, Russell T	Rexville	1885.	
Roberts, Jeremiah	Holton	1885.	
Robinson, John M	Versailles	1885.	
Rodgers, E. D	Milan	1885.	
Ziteke, Joseph	Batesville	1885.	

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RUSH COUNTY.

Officers.

John Moffett, Pres.
S. C. Thomas, Vice Pres.
F. G. Hackleman, Sec.
Wm. H. Smith, Treas.

Censors.

J. H. Spurrier.
S. W. McMahan.
J. C. Sexton.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Arnold, John	Rushville	1876.	
Arnold, W. W	Rush county	1876.	
Axline, J. A	Raleigh	1876.	
Green, J. W	Arlington	1876.	
Green, Lot	Occident	1881.	
Green, James C	Arlington	1883.	
Hargrove, W. S	New Salem	1876.	
Hackleman, F. G	Rushville	1882.	
Inlow, J. J	Manilla	1876.	
King, F. B	Homer	1885.	
Leech, E. W	Manilla	1886.	
Moffett, John	Rushville	1876.	
McMahan, S. W	Rushville	1879.	
Megee, Omer	Rushville	1885.	
Megee, W. N	Occident	1885.	
Parsons, C. H	Rushville	1878.	
Rayburn, I. W	Andersonville	1880.	Franklin county.
Smith, W. H	Rushville	1876.	
Sexton, J. C	Rushville	1882.	
Sexton, M	Rushville	1876.	Pres. State Soc. '81.
Spurrier, J. H	Rushville	1876.	
Thomas, S. C	Milroy	1878.	

This Society meets on the first Monday in each month.

STEUBEN COUNTY.

Officers.

C. W. Goodale, Pres.
T. B. Williams, Vice Pres.
J. F. Cameron, Sec.
T. F. Wood, Treas.

Censors.

Lyman Abbott.
T. Ray Morrison.
W. H. Waller.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Abbott, Lyman	Fremont	1875.	Suspended.
Bowin, M. M	Flint	1885.	
Brown, D. N. E	Hamilton	1879.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Byall, H. M.	Metz	1883.	
Cameron, J. Frank	Hamilton	1881.	
Fuller, Stephen H.	Pleasant Lake	1877.	
Goodale, C. W.	Metz	1885.	
Griffin, Daniel B.	Angola	1870.	Honorary.
Hagerty, J. L.	Fremont	1885.	
Morrison, T. Ray	Angola	1882.	
McNabb, T. B.	Fremont	1885.	
Neihardt	Angola	1885.	Honorary.
Ransbury, M. B.	Salem Center	1881.	
Simmons, E. B.	Fremont	1881.	
Shaw, M. F.	Angola	1885.	
Taylor, E. A	York Center	1882.	
Wallace, J. F.	Orland	1881.	
Waller, W. H.	Angola	1885.	
Wilkinson, J. J.	Orland	1884.	
Williams, T. B.	Angola	1885.	
Wood, T. F.	Metz	1865.	
Wood, H. D.	Angola	1863.	

Meetings of the Society are held on each alternate Friday.

Craig, Albert G ..... Vevay ..... 1884. Switzerland county.

TIPPECANOE COUNTY.

Officers.

Moses Baker, Pres.
S. R. Seawright, Vice Pres.
L. M. Irwin, Sec.
Wm. R. Moffit, Treas.

Censors.

George F. Beasley.
W. S. Walker.
John C. Webster.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Baker, Moses	Stockwell	1881.	
Baker, Joseph	Stockwell	1884.	
Beasley, George F.	Lafayette	1877.	
Crouse, J. H.	Dayton	1884.	
Ingersoll, J. M.	Lafayette	1884.	
Irwin, L. M.	Lafayette	1882.	
Moffit, W. R.	Lafayette	1880.	
O'Ferral, R. M.	Lafayette	1884.	
Peters, H.	Chauncy	1885.	
Rainey, H. W.	Lafayette	1883.	
Seawright, S. R.	Lafayette	1884.	Suspended.
Simison, J. F.	Romney	1884.	
Walker, W. S.	Lafayette	1877.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Webster, J. C	Lafayette	1878.	
Wetheral, R. B	Lafayette	.....	
Yount, S. T	Lafayette	1877.	

This Society meets on the first and third Thursday in each month.

TIPTON COUNTY.

Officers.	*Censors.*
Winser Austin, Pres.	G. M. Grove.
George M. Collins, Vice Pres.	N. W. Doan.
A. S. Dickey, Sec.	Wm. N. Heath.
M. V. B. Vickrey, Treas.	

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Armfield, Tillman O	Tipton	1881.	
Austin, Winser	Windfall	1874.	
Collins, George M	Tipton	1874.	
Dickey, A. S	Tipton	1884.	
Doan, Nathan W	New Lancaster	1874.	
Glass, William M	Atlanta	1874.	
Grove, Jasper M	Tipton	1874.	
Heath, William N	Sharpsville	1874.	
Pitzer, Andrew B	Tipton	1874.	
Rubush, David P	Sharpsville	1875.	
Vickrey, A. M	Tipton	1874.	Deceased.
Vickrey, M. VanBuren	Tipton	1874.	
Whelchell, Thomas C	Goldsmith	1878.	

VANDERBURGH COUNTY.

Officers.	*Censors.*
George B. Walker, Pres.	E. Walker.
Charles Knapp, Vice Pres.	C. P. Bacon.
Lewis D. Brose, Sec. and Treas.	A. M. Owen.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Babcock, Wm. D	Evansville	1882.	
Bacon, C. P	Evansville	1878.	
Bennett, Alfred T	Evansville	1886.	
Brooks, Stephen D	Evansville	1886.	
Brose, Louis D	Evansville	1883.	
Compton, J. W	Evansville	1878.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Day, Benjamin J.	Evansville	1879.	
Dow, John L	Evansville	1886.	
Hayden, A. M.	Evansville	1883.	
Knapp, Charles	Evansville	1883.	
Linthicum, Edward	Evansville	1878.	
Murphy, Edward	Evansville	1883.	
Owen, A. M.	Evansville	1879.	
Rose, W. B.	Evansville	1880.	
Walker, George B.	Evansville	1879.	
Walker, Edwin	Evansville	1882.	
Wieton, Isaiah	Evansville	1886.	

VIGO COUNTY.

Officers.

R. H. Culbertson, Pres.
L. J. Weinstein, Vice Pres.
F. W. Shaley, Sec.
E. E. Glover, Treas.

Censors.

A. W. Spain.
L. J. Willien.
G. W. Crapo.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Armstrong, Wm. P.	Terre Haute	1878.	
Askren, C. F.	Terre Haute	1886.	
Carson, L. E.	Prairietown	1878.	
Crapo, J. R.	Terre Haute	1878.	
Crapo, G. W.	Terre Haute	1879.	
Culbertson, B. H.	Brazil	1881.	
Eichelberger, W. C.	Terre Haute	1880.	
Givens, C. C.	Lewis	1883.	
Glover, E. E.	Terre Haute	1878.	
Hood, T. C	Terre Haute	1884.	Withdrawn.
Jenkins, W. O.	Terre Haute	1884.	
Killgore, A. W	Asherton	1883.	Suspended.
Larkins, E. L.	Terre Haute	1882.	
Littlejohn, H. C.	Lockport	1886.	
McGrew, J. E.	Terre Haute	1880.	
Mitchell, J. D.	Terre Haute	1874.	
Moorehead, T. W	Terre Haute	1878.	
Richardson, J.	Terre Haute	1885.	
Scovell, J. T.	Terre Haute	1880.	
Shaley, F. W.	Terre Haute	1884.	
Spain, A. W.	Terre Haute	1880.	
Spencer, W. B.	Terre Haute	1880.	Withdrawn.
Stetson, E. F.	Terre Haute	1880.	Removed.
Stunkard, T. C.	Terre Haute	1885.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Swafford, B. F.	Terre Haute	1874.	
Tobey, O. C	Terre Haute	1882.	
Warren, L. B	Terre Haute	1884.	
Weinstein, L. J	Terre Haute	1879.	
Willien, L. J	Terre Haute	1874.	
Worrell, J. P	Terre Haute	1874.	
Young, S. J	Terre Haute	1874.	

This Society meets on the first Thursday in each month.

WABASH COUNTY.

Officers.

John Kautz, Pres.
Joseph H. Ford, Sec.
E. F. Donaldson, Treas.

Censors.

M. M. Hale.
C. L. Dicken.
H. R. Minnick.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Ader, Henry	Somerset	1871.	
Brady, T. R	Lincolnville	1871.	
Bloomer, F. H	LaGro	1873.	
Blount, R. F	Wabash	1865.	
Brown, W. J	Wabash	1883.	
Brodbeck, Geo	Roann	1884.	
Dicken, J. L	LaFountain	1854.	
Dicken, C. L	Roann	1879.	
Donaldson, E. F	Wabash	1865.	
Ford, James	Wabash	1854.	
Ford, James H	Wabash	1872.	
Hale, M. M	Wabash	1871.	
Jessup, L. F	Wabash	1884.	
Kautz, John	Dora	1873.	
Kidd, G. P	Roann	1874.	
Lower, M. O	North Manchester	1876.	
Minnick, H. R	Treaty	1879.	
Mooney, H. C	Laketon	1876.	
Moore, P. G	Rich Valley	1871.	
O'Neal, Laughlin	Somerset	1859.	
Renner, J. H	LaGro	1872.	
Renner, M. E	LaGro	1883.	
Smith, A. J	Wabash	1871.	
Shaffer, Philip	North Manchester	1878.	
Thomas, A. McD	LaFountain	1855.	
Thompson, S. G	Wabash	1858.	
Winton, Horace	North Manchester	1865.	

Time of meetings the third Thursday of each month.

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WARREN COUNTY.

Officers.

A. M. Porter, Pres.
Justin Ross, Sec. and Treas.

Censors.

S. N. Osburn.
S. C. Fenton.
S. M. Reid.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Aborn, Orin	Marshfield	1881.	Deceased.
Fenton, Samuel C	Pine Village	1875.	
Osborn, S. N.	Rainsville	1875.	
Osburn, C. W	West Lebanon	1875.	
Porter, A. M	State Line	1875.	
Ross, Justin	Williamsport	1875.	
Reid, Samuel M	Independence	1883.	
Stewart, J. C.	Marshfield	1883.	

WARRICK COUNTY.

Officers.

W. A. Hewens, Pres.
S. L. Tyner, Sec. and Treas.

Censors.

T. J. McCoy.
Jesse Edgington.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
DeForest, D. A	DeForest	1873.	
Edgington, Jesse	Yankeetown	1883.	
Hewens, W. A	Chandler	1884.	
Jones, T. B	Lynnville	1875.	
McCoy, T. J	Eby	1886.	
Mills, W. H	Folsomville	1884.	
Park, Chas	Canal	1886.	
Quyatt, A	Dennison	1884.	
Scales, W. B.	Booneville	1874.	
Tyner, S. L	Booneville	1872.	
Wilson, W	Yankeetown	1874.	

WASHINGTON COUNTY.

Officers.

Chas. Rathbun, Pres.
T. H. B. Baker, Vice Pres.
Jas. P. Henderson, Sec.
C. L. Painter, Treas.

Censors.

John R. Bare.
A. G. Weir.
B. B. Brannock.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bare, John R	Salem	1884.	
Baker, Thomas H. B	Pekin	1884.	
Bowman, J. A	Farabee's Station	1884.	Honorary.
Bradshaw, A. E	Halo	1884.	
Brannock, B. B	Little York	1884.	
Duff, S. W	Salem	1884.	
Harrod, S. H	Canton	1884.	
Henderson, H. D	Salem	1884.	
Henderson, J. P	Salem	1884.	
Henderson, H. M	Salem	1885.	Honorary.
Herron, Thos. W	Little York	1884.	
Hobbs, H. C	Salem	1884.	
Hoysett, J. W	Saltilloville	1884.	
Layman, James H	Chesnut Hill	1884.	
Murphy, C. W	Salem	1884.	
Oatley, John H	N. Philadelphia	1884.	
Paynter, C. L	Salem	1884.	
Rathbun, Charles	Salem	1884.	
Spurgeon, Ambrose N	Rush Creek Valley	1884.	Suspended.
Tucker, Thomas M	Salem	1884.	
Weir, Alonzo G	Kossuth	1884.	

This Society meets on the first Monday in each month.

WAYNE COUNTY.

Officers.	*Censors.*
Nathan H. Ballard, Pres.	C. N. Blount.
Oliver N. Huff, Vice Pres.	J. Iutzi.
Chas. S. Bond, Sec.	I. T. Sweeny.
James F. Hibberd, Treas.	

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Allen, John R	Hagerstown	1883.	
Ballard, Nathan H	Richmond	1881.	
Bond, Charles S	Richmond	1883.	
Boyd, Samuel S	Dublin	1875.	Pres. State Soc. '76.
Blount, Cyrus N	Hagerstown	1875.	
Courtney, J. T	Whitewater	1882.	
Dwiggins, Moses F	Richmond	1884.	
Gans, P. T	West Florence, O.	1875.	Honorary.
Hadley, Edwin	Richmond	1875.	
Hibberd, James F	Richmond	1877.	Pres. State Soc. '62.
Huff, Oliver N	Fountain City	1879.	
Iutzi, Joseph	Richmond	1878.	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Johnson, Levi C.	Fountain City	1879.	
Kelsey, Leverett S	Richmond	1880.	
King, W. F	Centerville	1883.	
Lewis, Emma B.	Richmond	1884.	Withdrawn.
Mauk, John R.	Cambridge City	1875.	
Mendenhall, William O.	Richmond	1883.	
Moore, C. H.	Richmond	1884.	
Morrow, Sarah Jane	Richmond	1884.	
Pennington, Joel	Milton	1875.	Pres. State Soc. '72, V. P. '52–'54.
Rutledge, John W.	Cambridge City	1875.	
Sweeny, I. T.	Milton	1879.	
Taylor, James E.	Richmond	1878.	
Tillson, Hosea	Centerville	1876.	
Thomas, Mary F.	Chester	1876.	
Weist, Jacob R.	Richmond	1876.	Pres. State Soc. '79.

This Society meets on the second Thursday in May, July, September, November, January and March.

WELLS COUNTY.

Officers.

L. A. Spaulding, Pres.
G. E. Fulton, Sec.
M. N. Newman, Treas.

Censors.

L. Mason.
C. T. Melsheimer.
J. W. Crum.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Crum, J. W.	Barber's Mills	1883.	
Cummins, B. F	Bluffton	1878.	
English, C. H.	Barber's Mills	1884.	Suspended.
Fulton, J. C.	Murray	1878.	
Fulton, G. E	Bluffton	1878.	
Gorrell, A. G	Bluffton	1880.	
Gregg, H	Bluffton	1883.	
Melsheimer, C. T	Bluffton	1878.	
Metts, J. I.	Ossian	1878.	
Metts, A H	Ossian	1878.	
Mason, L.	Bluffton	1878.	
Maddux, L. E.	Keystone	1878.	
Morris, Thos	Mt. Zion	1886.	
Newman, M. N	Ossian	1878.	
Spaulding, L. A	Bluffton	1878.	

WHITE COUNTY.

Officers.

John Medaris, Pres.
R. M. Delzelle, Vice Pres.
William Spencer, Sec. and Treas.

Censors.

J. H. Rud.
A. B. Ballou.
M. T. Didlake.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Ballou, A. B	Burnettsville	1873.	
Clayton, George R	Monon	1883.	
Cooper, W. B	Monticello	1886.	
Delzelle, R. M	Reynolds	1874.	
Didlake, M. T	Monticello	1885.	
Jones, A. B	Burnettsville	1875.	
Medaris, John	Brookston	1866.	
McAllister, J. W	Idaville	1882.	
Rud, J. H	Idaville	1886.	
Smith, J. T	Brookston	1882.	Suspended.
Spencer, William	Monticello	1866.	

WHITLEY COUNTY.

Officers.	*Censors.*
Martin Ireland, Pres.	D. M. Linville.
N. I. Kithcart, Sec.	D. M. Marshall.
F. G. Grisier, Treas.	D. Kirkpatrick.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Eberhard, Eli L	South Whitley	1883.	
Grisier, F. G	Collins	1883.	
Ireland, Martin	Columbia City	1883.	
Kirkpatrick, Daniel	Larwill	1884.	
Kithcart, Nathan I	Columbia City	1883.	
Koonts, S	Laud	1883.	
Linville, D. G	Columbia City	1883.	
Linville, D. S	Columbia City	1886.	
LaFollette, T. J	South Whitley	1883.	
Magers, Francis M	Cherubusco	1883.	
Marshall, D. M	Columbia City	1883.	
Mitten, A. P	Columbia City	1883.	
Richards, John	Laud	1883.	
Scott, J. Wm. C	Hecla	1885.	
Souder, C	Larwill	1883.	
Weber, William	Columbia City	1883.	
Webster, D. E	Larwill	1883.	
Webster, Monroe W	South Whitley	1884.	
Wenger, N. R	Coesse	1883.	

The Whitley County Society meets on the second Tuesday of January each year, other meetings through the year but at no stated time.

County Societies from whom no reports have been received, are omitted from this list.

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ALPHABETICAL LIST OF MEMBERS.

NAMES OF FORMER MEMBERS, DECEASED, DELINQUENT, REMOVED OR EXPELLED, ARE OMITTED FROM THIS LIST. THE SECRETARY WILL CORRECT ERRORS, UPON NOTIFICATION, IN THE NEXT ISSUE.

Abel, O. E., Bryant.
Adams, J. M. C. Frankfort.
Adams, J. R., Petersburg.
Ader, Henry, Somerset.
Agee, C. J., Stendal.
Ager, U. A., Perrysburg.
Alexander, John H., Clifty.
Alexander, S. J., New Albany.
Alexander, L. E., Pendleton.
Allen, J. B., Hagerstown.
Allen, Wesley, West Newton.
Allen, E. F., Fayetteville.
Ames, George F., Eaton.
Anderson, James, Versailles.
Anderson, J. T., Honey Creek.
Anthony, J. R., Tampico.
Ardery, Oscar, New Cumberland.
Armfield, Tillman O., Tipton.
Armitage, D. R., Muncie.
Armstrong, W. P., Terre Haute.
Armstrong, E. A., Kokomo.
Armstrong, W. K., Mexico.
Arnold, Geo. W., Hobart.
Arnold, John, Rushville.
Arnold, W. W., Rush county.
Arthur, C. S., Portland.
Arwine, J. S., Columbus.
Askren, C. F., Terre Haute.
Austin, W., Winfield.
Austin, Charles B., Veedersburg.
Averdick, H. G., Oldenburg.
Axline, J. A., Raleigh.
Ayers, H. P., Fort Wayne.
Ayers, Stephen D., Marion.

Babcock, Wm. D., Evansville.
Bacon, C. P., Evansville.
Bacon, L. B., Warsaw.
Baily, G. D., Spiceland.
Baily, R. S., Spiceland.
Baker, Joseph, Stockwell.
Baker, Moses, Stockwell.
Baker, P. S., Greencastle.
Baker, Thomas H. B., Pekin.
Ballard, D. J., St. Paul.
Ballard, N. H., Richmond.
Ballou, A. B., Burnettsville.
Banker, A. J., Columbus.
Bare, Addison W., Bryantsville.
Bare, John R., Salem.
Barker, J., Brownsburg.
Barkley, J., Farmer's Retreat.
Barnes, C. A., Brightwood.
Barnes, George O., Courtland.
Barnes, W. C., Mier.
Barnett, J. S., Butler.
Barnett, W. W., Fort Wayne.
Barrett, E. H., Knightstown.
Bartholomew, B., Danville.
Bash, Joseph M., Warsaw.
Bates, A. J., Kokomo.
Batman, William F., Roachdale.
Basinger, T. W., Oatsville.
Beardsley, J. M., Winslow.
Beard, S. C., Vincennes.
Beard, F. W., Vincennes.
Beard, J. M. G., Ambia.
Beasley, George F., Lafayette.
Beck, E. W. H., Delphi.
Becknell, Irvin J., Milford.
Bell, Guido, Indianapolis.
Bell, William H., Logansport.
Bence, G. W., Greencastle.
Benedict, H., Springport.
Bennett, Alfred T., Evansville.
Bennett, Joseph B. Butler.

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Bennett, J. E., Hill Grove, Ohio.
Bennington, A. M., Lebanon.
Benson, L. L., Westfield.
Berry, A. F., Springvale.
Berry, George, Brookville.
Berry, J. S., Spartansburg.
Bethel, W. J., Petersburg.
Beverly, J. E., Winchester.
Bever, J. C., Vincennes.
Biggs, J. T., Mitchell.
Birch, Edward L., Covington.
Bitz, L. B., Blairsville.
Blair, F., Princeton.
Blair, J. S., Linn.
Blair, W. W., Princeton.
Bloomfield, E. M., Peru.
Bloomer, Frank H., La Gro.
Blount, C. N., Hagerstown.
Blount, R. F., Wabash.
Bobbitt, John H., Greensburg.
Bogan, E. W., Kirklin.
Bond, C. S., Richmond.
Bond, E. P., Lawrenceburg.
Bond, Marc L., Aurora.
Bond, R. C., Aurora.
Boor, W. F., New Castle.
Boor, W. A., New Castle.
Booth, A. D., Noblesville.
Borton, T. A., Plymouth.
Boswell, A. J., Andrews.
Bosworth, Jacob M., Pennville.
Bounel, M. H., Lebanon.
Bounel, Thomas A., New Brunswick.
Bowers, C. C., Bristol.
Bowers, A. J., Moore's Hill.
Bowin, M. M., Flint.
Bowker, James J., La Otto.
Bowles, T. J., Muncie.
Bowman, Charles, New Albany.
Bowman, J. A., Farrabee's Station.
Boyd, S. S., Dublin.
Boyden, W. J., Muncie.
Bracken, William, Greensburg.
Brady, C. C., Gilead.
Brady, T. R., Linconville.
Bradbury, A. B., Muncie.
Bradshaw, E. A., Halo.
Brandon, J. F. Anderson.
Brandon, W. S., Plum Tree.
Brannock, B. B., Little York.
Brayton, A. W., Indianapolis.
Brennan, E. J., Indianapolis.
Brenton, W. H., Peru.
Brenton, J. T., Osgood.
Brill, J. H., Pittsboro.
Brittain, S. H. Loogootee.
Broadbeck, G., Wabash.
Broadbent, Oliver, Anderson.
Brodbeck, W. H., Aurora.
Brodbeck, George, Roann.
Brooks, Stephen D., Evansville.
Brooks, Wm. H., Fort Wayne.
Brose, Louis D , Evansville.
Broughton, F., Avilla.
Brown, Chas. M., New Marion.
Brown, D. N. E., Hamilton.
Brown, G. W., Frankfort.
Brown, George W., Claypool.
Brown, H. V., Portland.
Brown, J. R., Ind. Hospital for Insane.
Brown, W. J., Wabash.
Browning, W. J., Ind. Insane Asylum.
Bruner, C. K., Westland.
Bruner, M. L., Westland.
Bryan, D. C., Indianapolis.
Bryan, T. N., Indianapolis.
Bryan, G. W., Bloomington.
Bucklin, G. W., New Harmony.
Buckingham, G. B., Brookville.
Bulkley, L. D., Danville, Ill.
Bullitt, T. W., Riverdale.
Burk, George L., Jamestown.
Burket, Calvin W., Warsaw.
Burket, Benjamin, Warsaw.
Burke, G. W., New Castle.
Burney, W. A., New Albany.
Burton, A. R., Princeton.
Burton, George C., Mitchell.
Burton, John, Georgia.
Burton, G. W., Mitchell.
Burton, W. A., Mitchell.
Busse, E. P., Vincennes.
Busjahn, F. A., Logansport.
Butler, C. H., Clifford.
Butler, W. C., Huron.
Byall, H. M., Metz.
Byers, A. R., Petersburg.

Cady, N. W., Logansport.
Cameron, J. F., Hamilton.
Campbell, J. C. L., Loogootee.
Cannon, G. H., New Albany.
Carson, Joseph C., Hebron.
Carson, L. O., Trader's Point.
Carson, L. E., Prairieton.
Carson, W. F., Roanoke.
Carr, George W., Ligonier.
Casebeer, H. M., Lagrange.
Casebeer, J. B. Auburn.
Chaffee, W. C., Huntington.
Chambers. John, Indianapolis.
Chamberlain, James N., Waterloo.
Charleton, Samuel H., Seymour.
Chatard, Rt. Rev. S. A., Indianapolis.
Chenoweth, N. T., Windsor.
Chenoweth, John T., Winchester.
Chittenden, George F., Anderson.
Chittick, Charles, Burlington.

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Chittick, A. J., Hillisburg.
Chitwood, J., Connersville.
Chitwood, J. E, Connersville.
Chitwood, G. R., Connersville.
Clapp, W. A.. New Albany.
Clark, A. J., Zionsville.
Clayton, George R., Monon.
Clouser, N. D., Hartford City.
Coble, Jacob, Spencer.
Cochrane, J., Spiceland.
Collins, George M., Tipton.
Collins, S. H., Lawrenceburg.
Cole, William C., Attica.
Colscott, T. A., Brookville.
Combs, G. W., Indianapolis.
Comingore, J. A., Indianapolis.
Compton, J. W., Evansville.
Conner, Thomas H., Metamora.
Conner, Levi, Jerome.
Contie, J. L., Deerfield.
Conwell, L. V., Van Buren.
Cope, James P., Butlerville.
Cook, C. P., New Albany.
Cook, G. J., Indianapolis.
Cook, John W., Pendleton.
Cook, Ward, Pendleton.
Cooper, W. B., Monticello.
Cooper, W. T., Circleville.
Corey, Levanner, Van Buren.
Corey, Lewis J., Van Buren.
Cornett, W. T. S., Madison.
Coryell, Samuel, Crothersville.
Cosby, G. O., Burnsville.
Cotton, H. T., Zionsville.
Courtney, J. T., White Water.
Covert, G. M., Sellersburg.
Cowan, John A., Auburn.
Cox, T. B., Frankfort.
Cox, N. D., Spencer.
Craig, A. G., Vevay.
Craig, T. E., Lawrenceburg.
Crapo, G. W., Terre Haute.
Crapo, J. R., Terre Haute.
Crawford, G. S., Clifty.
Crim, L. A., Bedford.
Crist, D. O., Indianapolis.
Crouse, H. M., Knightstown.
Crouse, J. H., Dayton.
Crum, J. W., Barber's Mills.
Culbertson, B. H., Brazil.
Cully, J. F., Bainbridge.
Culmer, George F., Odon.
Cummings, D. J., Houston.
Cummings, H. A., Houston.
Cummins, B. F., Bluffton.
Cummins, S. M., Elkhart.
Cure, H. W., Martinsville.
Curtis, Rev. George L., Jeffersonville.
Curtis, William H. Seymour.

Dancer, J., South Milford.
Daniels, David H., Otwell.
Daniels, Mrs. E. A., Indianapolis.
Daniels, G. W., Marion.
Darby, A. B., Waterloo.
Daugherty, C. A., South Bend.
Davidson, A., Brownsburg.
Davidson, J. F., Wallace.
Davis, L. N., Farmland.
Davis, J. M., Greenville.
Davis, J. R., Morris.
Davis, Royse, Deckers.
Davis, R. P., Portland.
Davisson, H. C., Hartford City.
Davisson, John H., Warsaw.
Day, B. J., Evansville.
Dayton, G. H., Lima.
Deforest, D. A., Deforest.
Delzelle, R. M., Reynolds.
Demott, W. M., Haysville.
Depew, E. W., Wolf Lake.
De Tar, David, Winslow.
Detcheon, S. S., New Richmond.
De Vore, H. V., Greencastle.
Dicken, C. L., Roann.
Dicken, J. L., La Fountain.
Dickes, John T., Boundary.
Dickes, P., Boundary.
Dickey, A. S., Tipton.
Didlake, M. T., Monticello.
Dillman, L. D., Connersville.
Diven, C. E., Anderson.
Dixon, H. C. Tunnelton.
Doan, N. W., New Lancaster.
Dodd, J., Clear Creek.
Donaldson, E. F., Wabash.
Donnell, T. C., Franklin.
Dorsey, G. L., Bicknell.
Dove, S. C., Westfield.
Drayer, P., Hartford City.
Dryden, T. F., Clayton.
Dryer, D. W., Lagrange.
Duff, S. W., Salem.
Dunlap, J. M., Indianapolis.
Dunning, L. H., South Bend.
Duzan, George W., Zionsville.
Dwiggins, Moses F., Richmond.

Earp, S. E., Indianapolis.
Easley, E. P., New Albany.
Eastman, Joseph, Indianapolis.
Eastes, W. T., Wheeling.
Eberhard, Eli L., South Whitley.
Eckelman, F. C., Elkhart.
Edenharter, George F., Indianapolis.
Egbert, George, Marion.
Edginton, Jesse, Yankeetown.
Eichelberger, W. C., Terre Haute.
Eidson, J. W., Bourbon.

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Elder, E. S., Indianapolis.
Elliott, Cyreneus, Poseyville.
Ellison, W. T., Heltonville.
Ely, J. M., Sugar Creek.
Ely, L. C., Sugar Creek.
Emanuel, G. E., Spencerville.
Ensminger, J. A., Whitlock.
Evans, E. B., Greencastle.
Evans, J. J., Winchester.
Eversole, Charles, Pleasant Plain.

Falk, F., Columbus.
Fall, W. D., Kirklin.
Fanbion, James, Heltonville.
Fanning, F. W., Butler.
Fansler, D. N., Logansport.
Farabee, C. E., Danville.
Farquhar, A. H., Ridgeville.
Farr, U. H., Martinsville.
Farrington, A. S., Waterloo.
Farris, E. G., Clinton Fall.
Faucett, J. H., Fayetteville.
Fenton, S. C., Pine Village.
Ferguson, Frank C., Indianapolis.
Fermier, P., Weisburgh.
Ferree, F. M., Indianapolis.
Ferris, E. S., New Castle.
Ferris, Samuel, New Castle.
Fertich, G. W., Dunkirk.
Field, N., Jeffersonville.
Fields, M. H., Indianapolis.
Fine, Ephraim M., Steam Corners.
Finney, Charles J., Attica.
Fisher, Samuel, Greencastle.
Fisher, G. C., Patoka.
Fisher, ——, Brown's Corners.
Fitch, A. P., Waynetown.
Fletcher, C. I., Indianapolis.
Fletcher, W. B., Ind. Hospital for Insane.
Flynn, Wm., Marion.
Ford, James, Wabash.
Ford, J. H., Auburn.
Ford, James, H., Wabash.
Fordice, J. L., Russelville.
Forshee, Thomas W., Madison.
Fouts, W. D., Jeffersonville.
Franks, H. P., Losantville.
Franks, Wm. H., Ligonier.
Freeland, J. F., Manchester.
Freeman, Edward D., Osgood.
French, Mattie, Indianapolis.
French, W. J., Frankton.
Friermood, E. K., Amboy.
Frink, C. S., Elkhart.
Fullenwider, C. H., Petersburg.
Fuller, S. H., Pleasant Lake.
Fulton, J. C., Murray.
Fulton, G. E., Bluffton.
Fussell, Lundy, Markleville.

Gaddy, Orville, Paris Crossing.
Gaddy, N. D., Lovett.
Galbraith, Thomas S., Seymour.
Gard, Oliver, Frankfort.
Gardner, Joseph, Bedford.
Garr, J. O., Kokomo.
Garretson, Wm. M., Perkinsville.
Garver, J. J., Indianapolis.
Gastin, J. H., Stanford.
Gaston, J. M., Indianapolis.
Gatch, J. D., Lawrenceburg.
Gans, P. T., West Florence, Ohio.
Genung, W. R., Fort Branch.
Gerrish, Millard F., Seymour.
Gibson, E. P., Hoosier Prairie, Ill.
Gilbert, Joseph L., Kendallville.
Gimmel, H. C., Markel.
Givens, C. C., Lewis.
Glass, W. M., Atalanta.
Glezen, A. E., Ireland.
Glover, E. E., Terre Haute.
Good, A. H., Selma.
Good, Charles H., Warren.
Goodale, C. W., Metz.
Goodrich, C. D., Lima.
Gorrell, A. G., Bluffton.
Goss, J. M., Freedom.
Gould, S. W., Argos.
Graham, B. R., Peru.
Graham, T. A., Jeffersonville.
Graham, W. B., Noblesville.
Gravis, C. M., Martinsville.
Gray, J. A., Otterbein.
Gray, J. M., Noblesville.
Gray, O. F., Whitehall.
Grayston, B. H. B., Huntington.
Grayston, C. E., Huntington.
Grayston, F. S. C., Huntington.
Green, Charles H., North Vernon.
Green, J. B., Mishawaka.
Green, James H., North Vernon.
Green, J. N., Stilesville.
Green, Elijah V., Martinsville.
Green, George R., Muncie.
Green, J. W., Boswell.
Green, J. W., Arlington.
Green, T. C., Albion.
Green, James C., Arlington.
Green, Lot, Occident.
Green, W. T., Albion.
Greenwell, Franklin, Fort Wayne.
Gregg, Henry, Roanoke.
Gregg, James S., Fort Wayne.
Gregg, H. Y., Bluffton.
Gregg, V. H., Connersville.
Griffin, D. B., Angola.
Griffith, Mrs. E. H., Darlington.
Griffith, T. J., Darlington.
Grigsby, W. B., Oaktown.

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Grisier, F. G., Collins.
Gronendyke, O. J., Greensborough.
Gronendyke, T. W., New Castle.
Grove, J. M., Tipton.

Hackleman, F. G., Rushville.
Hadley, E., Indianapolis.
Hadley, E., Richmond.
Haines, A. B., Aurora.
Haines, Nathaniel P. Roseburg.
Hale, Marcus M., Wabash.
Hall, John W., Portland.
Hamilton, A. A., Marion.
Hamilton, J. W., Linkville.
Hamilton, S. N., Connersville.
Hanmore, John, Jalapa.
Hanna, L. M., Greencastle.
Harding, P. D., Goshen.
Hardy, J. S., Whitestown.
Hargrove, W. S., New Salem.
Harrington, O. B., Elkhart.
Harris, J. E., Bloomington.
Harris, R. W., Algiers.
Harris, W. C., Carpentersville.
Harris, W. B., Vincennes.
Harrison, S. L., Vincennes.
Harrod, S. H., Canton.
Harrold, J. R., Roll.
Harter, J. H., Anderson.
Harter, William P., Anderson.
Harvey, Thomas B., Indianapolis.
Haslep, Marie, Indianapolis.
Haughton, R. E., Indianapolis.
Hawkins, E., Belle Union.
Hawley, K. D., Elizabethtown.
Haworth, M. C., Noblesville.
Hayden, A. M., Evansville.
Hays, George C., Hillsboro.
Hays, John W., Albion.
Hays, W. F., Indianapolis.
Haymaker, G. W., Charleston.
Hazel, John B., Claypool.
Heady, W. S., Jamestown.
Heaton, C., Moore's Hill.
Heath, William N., Sharpsville.
Heatwole, J. H., Goshen.
Heavenridge, A., Stilesville.
Heinrichs, W. F., Indianapolis.
Helm, J. H., Peru.
Henderson, H. D., Salem.
Henderson, H. M., Salem.
Henderson, J. P., Salem.
Hendricks, T. L., Fairfield.
Hendricks, W. E., Martinsville.
Henley, Alpheus, Fairmount.
Henry, W. C., Aurora.
Hensler, Ernst, W. Franklin.
Hensley, J. H., Vincennes.
Henthorne, L. S., Indianapolis.
Herman, John, Logansport.
Herr, H. S., Westfield.
Herron, Thomas W., Little York.
Hervey, J. W., Indianapolis.
Hervey, F. F., Fortville.
Hess, F. T., Cadiz.
Hess, John N., New Marion.
Hess, Luther P., Marion.
Hewens, W. A., Chandler.
Hibberd, J. F., Richmond.
Hickam, W., Freedom.
Hicks, C., Caborns.
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Hicks, P. R., Nebraska.
Higgins, C. B., Peru.
Hoadley, W. J., Danville.
Hobbs, H. C., Salem.
Hobbs, W., Knightstown.
Hodges, E. F., Indianapolis.
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Holbert, William M., Eldrod.
Hollinger, J. N., Henry county.
Hollis, Samuel, Uplank.
Holloway, O. E. Knightstown.
Holmes, J. H., Manson.
Holton, W. M., New Harmony.
Holtzendorff, A. C., Plymouth.
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Horne, Samuel S., Jonesboro.
Hornbrook, J. T., Union.
Hornocker, S. D., Silverville.
House, G. F. H., Clayton.
Houston, J. R., Martinsville.
Howard, N. P., Sr., Greenfield.
Howard, N. P., Jr., Greenfield.
Howard, S. B., Tunnelton.
Hoysett, J. W., Saltilloville.
Hubbard, W. H., Fairmount.
Huff, O. N., Fountain City.
Hughes, W., Lima.
Hunt, H. C., Trenton.
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Hunt, William A., Anderson.
Hunt, P. G. C., Indianapolis.
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Hupp, Samuel, Warren.
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Hutchings, B. F., Crawfordsville.

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Kimberlin, H. L., Mitchell.
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Kirkpatrick, Daniel, Larwill.
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Krawsgrill, D., Wadesville.
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Murray, A. P., Albany.
Murray, A. L., Eaton.

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Osburn, S. N., Rainsville.
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Owings, T. B., Oaktown.

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Patterson, E. L., Laurel.
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Pearson, William, Fountaintown.
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Peckenpaugh, G. R., Mt. Vernon.
Pence, Rollin, Peru.
Pennington, Joel, Milton.
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Plummer, R. S., Shoals.
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Porter, John R., Lebanon.
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Powell, J. Z., Logansport.
Preston, A. G., Greencastle.
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Quyatt, A., Dennison.

Ragan, John S., Avon.
Rains, G. W., Courtland.
Rainey, H. W., Lafayette.
Ramsey, D. C., Mount Vernon.
Randolph, A. J., Vincennes.
Ransbury, M. B., Salem Center
Rariden, C. E., Bedford.
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Rathbun, Charles, Salem.
Rawlings, S. O., New Harmony.
Rayburn, I. W., Andersonville.
Rea, C., L., Rogersville.
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Rea, O. A., Marmont.
Reagan, A. W., Mooresville.
Reagan, Jesse S., Reese's Mill.
Reasoner, H. D., Marion.
Reasoner, O. I., Shideler.
Rectanus, F., Aurora.
Reed, E. P., Ewing.
Regennas, R. G., Hope.
Reid, Samuel M., Independence.
Renner, J. H., Lagro.
Renner, M. E., Lagro.
Resoner, William M., Sulphur Springs.
Reyer, E. C., Ind. Hospital for Insane.
Reynolds, G. R., Plymouth.
Reynolds, J. M., Memphis.
Richardson, J., Terre Haute.
Richardson, Nehemiah, Vernon.
Richardson, Will H., Vernon.
Richards, John, Laud.
Richmond, C., Kokomo.
Riley, J. J., St. Louis Crossing.
Ristine, W. H., Crawfordsville.
Ritter, C. L., Gosport.
Roberts, Jeremiah, Holton.
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Ryan, W. B., Willow Branch.

Salb, J. P., Jasper.
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Scales, W. B., Booneville.
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Scott, James T., Greentown.
Scott, Joseph, Markle.
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Scott, William, Kokomo.
Scott, J. W. T., Hecla.
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Sexton, Marshall, Rushville.
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Seymore, C. A., Wawaka.
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Shaffer, A. H., Huntington.
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Shaw, M. F., Angola.
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Shively, James S., Marion.
Shively, Marshall T., Marion.
Shobe, W. A., Ligonier.
Shoptaugh, S. H., Princeton.
Short, John L., Lagrange.
Short, W. H., Lagrange.
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Shulse, W. H., Lebanon.
Simison, J. F., Romney.
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Sims, J. G., Portland.
Sims, J. F., Indianapolis.
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Skiff, Clark, Selma.
Sloan, George W., Indianapolis.
Sloan, John, New Albany.
Smalley, J. K., Hartsville.
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Smith, C. H., Lebanon.
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Smith, William H., Leesville.
Smith, W. H., Rushville.
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Tucker, Thomas M., Salem.
Tucker, H. G., Cromwell.
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Weber, William, Columbia City.
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Williams, W. S., Kendallville.
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Willien, L. J., Terre Haute.
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Winton, Robert, Muncie.
Wilson, J. H., Plymouth.
Wilson, R. Q., Kokomo.
Wilson, W. T., Bunker Hill.
Wilson, W., Yankeetown.
Wilt, W. W., Montpelier.
Wishard, W. H., Indianapolis.
Wishard, W. N., Indianapolis.
Woodburn, J. H., Indianapolis.
Wooden, John L., Greensburg.
Wooden, W. H., Greensburg.
Wood, H. D., Angola.
Wood, T. F., Metz.
Woodward, W. W., Springville.
Woodworth, B. S., Fort Wayne.
Woolen, G. V., Indianapolis.
Work, J. A., Elkhart.
Work, Samuel A., Wolcottville.
Worrell, J. P., Terre Haute.
Wright, J. W., Kokomo.
Wright, C. E., Indianapolis.
Wright, C. H., North Madison.
Wright, Ervin, Roanoke.
Wyman, C., Lyons Station.

Yancy, S. T., Fortville.
Yandell, W., Huron.
Yohn, W. A., Valparaiso.
Young, S. J., Terre Haute.
Young, T. B., Poseyville.
Yonky, W. P., Rossville.
Younkmon, A. B., Bremen.
Yount, S. T., Lafayette.
Yost, J. L. W., Mitchell.

Ziteke, Joseph, Batesville.

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